

5  
62.3  
3e  
978  
101.3

# AN EVALUATION OF DEINSTITUTIONALIZATION IN MONTANA PLEASE RETURN

STATE DOCUMENTS COLLECTION

APR 25 1978

MONTANA STATE LIBRARY  
930 E Lyndale Ave.  
Helena, Montana 59601

BEHAVIORAL ASSESSMENT OF THE  
EFFECTS OF DEINSTITUTIONALIZATION  
UPON THE DEVELOPMENTALLY DISABLED

THE OFFICE OF THE GOVERNOR  
THOMAS L. JUDGE, GOVERNOR

OFFICE OF BUDGET AND PROGRAM PLANNING  
GEORGE L. BOUSLIMAN, DIRECTOR



MSU NOV 1 78

SEP 12 79

NOV 9 80

NOV 9 1983

Montana State Library



3 0864 1004 9759 6

BEHAVIORAL ASSESSMENT OF THE EFFECTS OF  
DEINSTITUTIONALIZATION UPON THE  
DEVELOPMENTALLY DISABLED\*

Submitted by:

James A. Walsh and Roberta A. Walsh

OFFICE OF BUDGET AND PROGRAM PLANNING  
PLANNING-RESEARCH DIVISION

George Bousliman  
Director

John S. Fitzpatrick, Ph.D.  
Deputy Director for  
Planning and Research

\*Supported in part by funds from  
the U.S. Department of Health,  
Education and Welfare - Grant  
No. 50-P-40311/8-01

## TABLE OF CONTENTS

	<u>Page Number</u>
I. INTRODUCTION	1
II. PHASE I	11
III. PHASE II	24
IV. DISCUSSIONS AND CONCLUSIONS	36
V. SUMMARY	47
APPENDIX I SPECIMEN BDS AND DESCRIPTION OF MANIFEST CATEGORIES	
APPENDIX II DESCRIPTIVE STATISTICS FOR PHASE I BDS	
APPENDIX III DESCRIPTIVE STATISTICS FOR PHASE II BDS	
APPENDIX IV AGENCY COMMENTS AND RESPONSES	

## INDEX OF TABLES

	<u>Page Number</u>
1. MEANS AND VARIANCES OF MANIFEST VARIABLES IN PLACEMENT SETTINGS FOR DEVELOPMENTALLY DISABLED ADULTS RELEASED IN FIRST FOURTEEN MONTHS OF BIENNIUM	16
2. MEANS AND VARIANCES OF MANIFEST VARIABLES FOR 159 DEVELOPMENTALLY DISABLED CHILD AND ADULT RESIDENTS OF STATE INSTITUTIONS IN DECEMBER, 1976	17
3. MEAN DIFFERENCES AND $t$ -STATISTICS BETWEEN MANIFEST VARIABLES FROM DECEMBER ALL-INSTITUTION SAMPLE AND 40 ADULTS RELEASED IN FIRST FOURTEEN MONTHS OF BIENNIUM	19
4. MEANS AND VARIANCES FOR DEVELOPMENTALLY DISABLED ADULTS AND CHILDREN RELEASED IN LAST SIX MONTHS OF BIENNIUM	29
5. MEAN DIFFERENCES AND $t$ -STATISTICS BETWEEN MANIFEST VARIABLES FROM INSTITUTION TO COMBINED PLACEMENT SETTINGS FOR 12 ADULTS AND CHILDREN RELEASED IN LAST SIX MONTHS OF BIENNIUM	30

## I. INTRODUCTION

## Introduction

The purpose of this study was to evaluate the effectiveness of the State of Montana's program of deinstitutionalizing developmentally disabled persons. The primary focus was the change in behavior associated with movement out of the institutions and into community settings such as group homes in conjunction with day activity centers such as sheltered workshops. The behavior in question was carefully defined to include those skills basic to and important for successful functioning as a member of an independent community living group. The relationship of demographic, medical, familial and related variables to behavior changes associated with deinstitutionalization were investigated, and an evaluation was made of the decision process by which individual residents of institutions were chosen for placement in particular community settings.

In order to provide a frame of reference within which to evaluate this study, a review of salient background information will be presented. The summary to be provided below is not intended to be comprehensive; its foci are a brief historical perspective and the advantages and disadvantages attributed to deinstitutionalization in the mental health and mental retardation literatures. Following the review, deficiencies in existing studies will be pointed out and the plan of the present study, which is designed to remedy some of those insufficiencies, will be discussed.

The term "deinstitutionalization" has been used in a variety of ways, but a common definition involves: 1) the transfer to the community of institutional residents who are adequately prepared for such a change; and 2) the establishment or enhancement of community facilities for providing some combination of living arrangements, livelihood, and continuing care or support for them. Closely associated with this definition is a political/social belief

that each individual has the rights to autonomy and self-determination insofar as he has the capacity to exercise them (Hersch, 1972).

Three factors provided much of the initial impetus for the movement to deinstitutionalize the developmentally disabled. The first was the interest of President Kennedy and his family in mental retardation and the subsequent commitments of large foundations to fund research in the area. The second was the establishment by Congress in 1962 of the National Institute for Child Health and Human Development. The Institute has provided both leadership and financial resources for research in developmental disabilities.

The third important factor was the passage by Congress of the Community Mental Health Centers Act of 1963. That legislation provided support for the establishment of a network of community facilities for outpatient care of the emotionally disturbed. Subsequently, both patient populations in state hospitals and numbers of admissions to them have shown declines (Pollack and Taube, 1975; Taube, 1974) as greater numbers of episodes of emotional disturbance have been handled without resort to institutionalization. This demonstration, at least on a statistical basis, of the effectiveness of community treatment of emotional disturbance provided a potent argument for a similar movement on behalf of the developmentally disabled, especially with the development of operant technology for more effective training and behavior management generally.

Advocacy for deinstitutionalization has focused not so much on its advantages as on the disadvantages of institutional care. Evidence has been produced that institutional treatment is, in general, custodial rather than therapeutic (Schwartz, 1971), that it fosters regression among residents (Herz, 1972) including the loss or attenuation of basic living skills, and that it deprives residents of beneficial contacts available in the community from "sympathetic and supportive relatives and friends" (Kramer, 1967). Other negative factors

include substandard treatment and care in the institution (Zigler and Balla, 1977), and the dehumanizing effects of the powerlessness, depersonalization, and lack of self-determination which are seemingly inherent in hospital settings (Rosenhan, 1973).

On the other hand, there is concern that community caretakers of deinstitutionalized persons may exploit them financially (Zigler, 1977) and, through lack of organized programs, allow them to slip into complete lethargy and become further dehumanized (Slovenko and Lubin, 1974). While most observers do not doubt that community settings are more humane than institutions, there is little evidence in the literature to suggest that an individual's physical or psychological development is improved (Begab and Richardson, 1975) in the community.

Questions have also been raised as to the accessibility (Feldman, 1971) and adequacy (Rutman, 1976) of treatment facilities in the community. There are additional problems of community resistance and opposition (Bachrach, 1975b), precipitate implementation of incomplete plans for wholesale deinstitutionalization (Becker and Schulberg, 1976), and inadequate attention to the preferences and desires of the people to be placed (Mechanic, 1968).

Thus, many issues have been raised about the advantages and disadvantages of deinstitutionalization, but evaluation studies of actual outcomes are rare in the social and behavioral science literature (Bachrach, 1975a). Behaviorally oriented studies are even more infrequent. When behavioral analysis rather than evaluation of such global variables as "overall success" has been attempted, the focus has usually been either narrow, e.g., the acquisition of specific vocational skills (Begab and Richardson, 1975), or quite broad, e.g., responsiveness to social reinforcement (Zigler, Balla and Butterfield, 1968). Only a few investigators have attempted comparisons of basic living skills and interpersonal competencies before and after deinstitutionalization. The only studies

of which we are aware have the limitation, exemplified in an otherwise excellent paper by Beslanwitch and Swenson (1976), of very small sample sizes.

The lack of wide-ranging behaviorally oriented outcome studies is remarkable since the basic underpinning of any program of "normalization" or "mainstreaming", that is, providing developmentally disabled persons with some approximation of a modal societal situation, must depend upon the acquisition and retention of such basic competencies as the ability to use a knife and fork correctly at meal time, a drink from a glass without spilling, to communicate with persons in their environment and to refrain from physically abusing other individuals. One reason for the lack of such research has been the absence of appropriate behavioral assessment instruments. Until recent years, behavioral instruments suitable for a developmentally disabled population have either been non-existent or have not been sufficiently refined to exhibit satisfactory objectivity and reliability. Over the last few years, however, assessment instruments of considerable sophistication and power have been developed. Two of them were employed in the present study.

#### Statement of Problem

The original design of the study as prepared by the Governor's Office of Budget and Program Planning included three principal phases: 1) the evaluation of a sample of 40 developmentally disabled adults who had been deinstitutionalized in the first year of the 1975-77 biennium; 2) the evaluation of a sample of 30 relatively low-functional developmentally disabled adults scheduled for placement during fiscal year 1977; and 3) the evaluation of two matched samples of 30 developmentally disabled children scheduled for placement during fiscal year 1977.

All four samples were to be assessed before and after deinstitutionalization to provide a measure of the change in behavior associated with movement out of the institution and into the community. Two post-institution assessments were planned for the adults scheduled for placement in 1977 in order to provide information about continuing changes in behavior resulting from longer periods of time in community settings. One sample of children scheduled for placement in 1977 was to be released several months before the other in order to make possible a comparison between the two while one group was still institutionalized. Should both samples show improved behavior at that time, one could attribute the change to historical factors such as overall increase in support for services to the developmentally disabled regardless of their placement. Such a control group against which to compare treatment effects has been shown to be desirable during times when great changes in the circumstances of a societal group, e.g., the developmentally disabled, are taking place.

Because the placement system for the developmentally disabled in Montana uses a congruence approach, i.e., a matching of client needs with services available in given community environments, which requires a relatively large number of placement possibilities, and because the number of available community placements did not increase as rapidly as predicted during the latter half of 1976 and the first half of 1977, many fewer people were deinstitutionalized than had been planned, and therefore the original design had to be modified.

The modified design had two principal phases: 1) the evaluation after a minimum of six months in the community of a sample of 40 developmentally disabled adults who had been deinstitutionalized during the first 14 months of the 1975-77 biennium; and 2) the evaluation of all developmentally disabled children and adults who were transferred from the institutions to the community

during the first six months of 1977. No hard and fast minimum time until post-institutional assessment could be set for the latter group, and the time between deinstitutionalization and the assessment in the community was therefore to be considered an independent variable and examined for relationships with other variables, e.g., change in frequency of stereotypic behavior.

The modified design had the disadvantage of not allowing for direct comparison between a deinstitutionalized sample and an equated group that had remained in the institutions. As will be seen, however, ad hoc comparisons bearing upon this issue were possible.

The assessment instruments used before and after deinstitutionalization were behavioral. That is, the units of observation for each instrument were segments of overt behavior which two observers, both of whom had watched the same person perform the same act, could agree upon with respect to placement in a set of categories such as, for example, "Vocalization", "Peer-Social Interaction", or "Physical Aggression." The categorization process is objective in the sense that sets of physically observable and agreed upon cues are used as discriminanda. It is reliable in that, if two observers made a large number of categorizations they would be found to agree in the sense that they classified behavior segments identically a large proportion of the time.

Behavioral measurements differ from many other psychological assessment techniques in several important ways. First, they tap the behavior to be measured directly rather than indirectly. They do not, for example, require verbal responses to written questions thought to be related to overt actions of some kind and then make inferences from the written responses about the likelihood that the action will occur in some appropriate situation. Instead, a behavioral approach would entail a plan for observing the overt actions directly.

While such a straightforward approach is often desirable, such plans are not useful with purely mental behavior or with behaviors that occur very infrequently.

In the second place, behavioral measurements must of necessity be specific and well-defined rather than global, since any plan for their observation has to include objective criteria for their appearance. A behavioral approach is thus freer of ambiguity than the measurement of a more global concept such as intelligence whose manifestations may often be subtle and indirect. By the same token, it is difficult to make satisfactory behavioral assessments of global aspects of behavior which may have effects in broad areas of life.

From a more technical point of view, the "validity" of behavioral measurement is easy to establish. Either particular segments of behavior can be observed within the confines of the assessment plan by raters who agree on their frequency of occurrence or they cannot. The validity of more global concepts such as intelligence is a much more time-consuming process. For not only must responses which represent "intelligence" be shown to occur, they must also be demonstrated not to represent other perhaps similar aspects of personality.

The behavioral approach was chosen for measuring outcomes in this study because the focus was on specific skills and specific dimensions of overt behavior which previous research (American Association of Mental Deficiency, 1975; Cataldo and Risley, 1974) had shown to be related to successful living in group and institutional environments. Such an approach can do much to guarantee the relevance of particular observational data to specific outcomes, but it imposes limits as well in that behavioral measurements often generalize but poorly to situations different from the ones they were originally derived from.

One assessment instrument, the Behavior Development Survey<sup>1</sup> or BDS (American Association of Mental Deficiency, 1975) represents an inventory approach. In the case of each developmentally disabled person for whom it is to be completed, a staff member who is familiar with the person's habits and performance reads sets of phrases describing alternative behaviors in 38 different domains and, for each domain, checks the phrase or phrases which best describes the resident's behavior.

As examination of the specimen BDS in Appendix I makes clear, the areas tapped are diverse and, in toto, are intended to form a catalog of basic living and coping skills and requirements. The domains tapped are as fundamental as vision and audition, as necessary for everyday living as table habits and the ability to wash and bathe oneself, and as complex as social interaction. The BDS includes maladaptive as well as adaptive behaviors. The present form of the BDS, which is considerable shorter than the parent Adaptive Behavior Survey, is the result of more than a decade's work by an AAMD project group now centered at Pacific State Hospital in Pomona, California.

The second instrument used, the Resident Activity MANIFEST or Manifest (Cataldo and Risley, 1974) consists of a set of categories of behavior which are important for successful living in either an institutional setting or a community placement, and a technique for observing and recording them. The categories, many of which are not mutually exclusive, are: Vocal (Voc), Language Communication (Comm), Sterotypic (Ster), Object Manipulation (Obj), Environmental Engagement (Envg), Isolated Active (IsoA), Isolated Passive (IsoP), Staff Social Interaction (S), Peer Social Interaction (P), Aggression (Agg), and Environmental Disruption (Dis). Their specific contents and limits are given in Appendix I. It should be noted that this version of the Manifest is

<sup>1</sup> Used by permission of Dr. Herbert Grossman, Research Group at Pacific State Hospital, Pomona, CA 91766

only one of a number of versions being used at Boulder and elsewhere in research and evaluation.

The observational technique used for the Manifest is known as "instantaneous time sampling," and brings the Manifest more within the mainstream of current behavioral assessment devices than is the BDS with its reliance upon the memory of the staff member who fills it out.

In instantaneous time sampling, a (generally) predetermined number of observations is made of a resident as he goes about his normal activities in the institution or community placement. The observations are made for one or two seconds at precisely specified time intervals, for example every five minutes. After watching for a second or two, the observer turns away to avoid the possibility of confusing himself by adding the impression of an additional segment of behavior to the one he has just seen, and he categorizes his observations as belonging to one or more of the 11 categories. The observer also often turns away or looks away from the resident for a few seconds before making the observation in order to avoid biasing his categorization through a set to continue seeing some ongoing behavior. The observer strives to be unobtrusive in order that his own actions and presence will have a minimal effect upon the behavior of the resident.

Pre- and post-deinstitutionalization assessments were made with the BDS for both the 40 adults released in the first 14 months of the biennium (hereafter called the Phase I sample) and for the combined child and adult sample (hereafter called the Phase II sample) released in the first six months of 1977. Pre- and post-deinstitutionalization assessments with the Manifest were accomplished for the Phase II sample, but only a post measure could be obtained on the Phase I sample. For these and related reasons, methodology and results will be discussed separately for the Phase I and Phase II samples.

Two principal statistical techniques were used to evaluate results. The first is chi-squared, a procedure that is appropriate when data are counts of observations falling into mutually exclusive categories, as is generally the case with the BDS. Different forms are used to evaluate independent samples and related samples, e.g., the same group tested on different occasions. It is used to determine the strength of a relationship between variables. In general, the larger the value of  $\chi^2$ , the more certain we are that an observed relationship between variables is a real one rather than the artifact of an atypical sample. Ordinarily we set some probability level, called the alpha level, as a decision point for accepting or rejecting the hypothesis that a relationship is the product of chance factors.

The second technique employed is known as Student's t or the t-test. A variety of forms of the test exist. The two used here were the test for mean differences between independent samples and the test for mean differences between related samples, e.g., the same group of people tested on two occasions. Analogously to chi-squared, the larger the value of t, the more certain we are that an observed difference between the means of two groups on some variable is a real one rather than the artifact of an atypical sample. Again, we ordinarily set some probability level, called the alpha level, as a decision point for accepting or rejecting the hypothesis that an observed mean difference is the product of chance factors.

## II. PHASE I

## PHASE I

### Method and Results

#### Subjects

Forty developmentally disabled adults were chosen from among the 101 placed in community settings, excluding nursing homes, between July 1, 1975 and August 31, 1976 to compose the Phase I sample. Selection was on a semi-random basis. That is, the goal of obtaining an unbiased sample by use of a random number table was restricted by funds available for travel, so that developmentally disabled individuals placed in the far eastern part of the state were automatically excluded from consideration because of the high cost of travelling to their locale. A second restrictive factor was the decision to include in the sample as many individuals placed in natural home settings as possible.

Demographic variables. There were 30 males and 10 females in the Phase I sample. The proportion of females in the sample does not differ significantly ( $z < 1.00$ ,  $p > .05$ ) from the proportion in the population of placed adults. The mean age of the members of the sample is 26.42 years with a standard deviation of 8.16. The age distribution is fairly normal in shape with a slight tail at the older end due to the presence of several individuals in their late thirties and forties.

Each person in the sample had a medical diagnosis of mental retardation and fell into one of six relatively broad subcategories. Ten were classified as familial; six were victims of Down's syndrome; eight were afflicted by other congenital anomalies; eight cases were due to unknown causes; four were associated with birth trauma or injury; and four were the result of postnatal

infection or postnatal trauma. More than one subcategory was listed for several individuals. Only the primary subcategory was used to identify them here.

Placement settings. Thirty-eight people were placed in community settings from Boulder River School and Hospital and two were placed from Galen State Hospital. Both of the latter individuals had originally been residents of Boulder. The sample members were placed in seven communities situated primarily in the western and central parts of the state: Bozeman, Butte, Conrad, Great Falls, Helena, Lewistown, and Missoula. Seven individuals were placed in Bozeman and four to six in each of the other communities. Thirty-seven people were situated in group homes and three were in their natural homes. The mean elapsed time between community placement and evaluation was 40.85 weeks with a standard deviation of 14.53.

All 40 of the community placement residents were participating in day program, although three had been temporarily withdrawn at the time of evaluation because of illness or injury. The day programs were generally sheltered workshops, educational advancement or remediation programs (under the auspices of special education in the public schools in seven cases), or, most commonly a combination of the two.

Comprehensive social services were available to the residents of virtually every placement setting, and nearly 90% had access to a full range of medical, rehabilitative, and educational services through either contractual arrangements, community facilities, or volunteer efforts.

The residential staff (including house parents, counselors and helpers on shift during late afternoon and evening hours) to resident ratio ranged from 1:2 to 2:7. The educational attainments of staff persons varied from

an eighth grade education to beyond the M.A. level with a mean of approximately 14 years. Amount of specialized training in working with the developmentally disabled ranged from three days to more than three years with a mean of about four months. This latter distribution is bimodal and includes about seven individuals with three or four years' training and a dozen with minimal pertinent background. Mean values for characteristics of placement staff are stated in approximate terms, because overlapping shifts, ad hoc divisions of duties, and a moderate rate of turnover make precise calculations impossible.

None of the relationships between any pair of the broadly categorized "demographic" and "placement setting" variables was significant. The variables examined included: age, sex, ethnic group membership, birth order, family size, family socioeconomic status, medical diagnosis, familial pattern or retardation, staff-to-resident ratio, day placement status, availability of social services, availability of medical services, availability of rehabilitative services, availability of educational services, average educational level of placement staff members, average amount of specialized training of placement staff members, and estimated square feet of available living space per placement resident.

#### Behavioral assessment

Manifest. Observations using the Manifest were made in group and natural homes on all 40 members of the Phase I sample during January, February and early March of 1977 by one of two experienced observers whose interrater reliability was always greater than .95 as long as the number of observations per resident was 10 or more. Interrater reliability, calculated as

$$\frac{\text{number agree} - \text{number disagree}}{\text{total observations}}$$

did not drop below .90 in any setting unless fewer than six total observations per resident were made. The elapsed time between successive observations on a sample member was kept as uniform as possible and ranged from three to 17 minutes. The total number of observations per resident in the home setting ranged from five to 25, with a mean of 12. Only one resident was observed fewer than seven times.

Observations in day placements were not possible for three people who were sick or injured during the January-February-March assessment period, nor for six people enrolled in public school special education programs, because of a liability/insurance problem which could not be solved in the time available. The total number of observations per resident in the day setting ranged from seven to 15 with a mean of 10. The elapsed time between successive observations ranged from four to 18 minutes and was kept as constant as possible for a given sample member.

Since Manifest observations in the institution were not available on the Phase I sample, a general institutional sample was obtained to provide a basis for comparison. During December, 1976 all of 159 developmentally disabled residents at Boulder, Galen and Warm Springs State Hospital who were classified as eligible for community placement were observed by both of the experienced raters mentioned above. This general institutional sample does not include the 23 people who formed the Phase II sample but it does include 34 children, since there were no significant differences between children and adults in the institutions on any of the Manifest variables. From 10 to 15 observations were made on each sample member, with a mean of 12. The elapsed time between successive observations ranged from three to 38 minutes and was kept as constant as possible for a given resident.

Means and variances of the Manifest variables for the Phase I sample are listed separately in Table I for the group or natural home setting and the day activity setting. The abbreviations Voc, Comm, Ster, Obj, Envq, IsoA, IsoP, S, P, Agg, and Dis are used in the tables in referring to these variables.

Differences between the means of home and day placement values were subjected to t-tests for paired observations based upon the 31 individuals for whom data in both settings were available and, except in two cases, the means and variances were recomputed based upon the entire data sets since the means did not differ significantly. The pooled values are also given in Table 1. The means of variables Object Manipulation and Environmental Engagement did differ significantly ( $t(30) = -3.42$ ,  $p < .01$  and  $t(30) = -2.82$ ,  $p < .05$ , respectively), and hence pooled values were not calculated. Means and variances of the Manifest variables for the general institutional sample are given in Table 2.

Means differences between the general institutional sample and the Phase I placement settings are listed, together with t-statistics, in Table 3 for each Manifest variable. The mean proportion of occasions when the behavior in question was recorded over the several observations made of each resident was significantly greater in placement settings (Phase I sample) than in the institution (general institutional sample) for Staff Social Interaction and Peer Social Interaction; it was significantly smaller for Stereotypic and Isolated Passive. For Object Manipulation, the mean proportion was significantly smaller in the institution than in day placements; the mean proportion was smaller in the institution than in the home placement, but not significantly so. For Environmental Engagement, the mean proportion was significantly smaller

Table 1

Means and Variances of Manifest Variables in Placement Settings for  
Developmentally Disabled Adults Released in  
First Fourteen Months of Biennium

<u>Variable</u>	<u>Placement-a</u> <u>Group Home</u>		<u>Placement-b</u> <u>Day</u>		<u>Placement-c</u> <u>Combined</u>	
	<u>M</u>	<u>Var</u>	<u>M</u>	<u>Var</u>	<u>M</u>	<u>Var</u>
Voc	.13	.04	.12	.02	.13	.02
Comm	.12	.03	.08	.01	.11	.02
Ster	.05	.03	.07	.02	.05	.01
Obj	.40	.08	.60	.04	+	+
Envg	.61	.08	.77	.05	+	+
IsoA	.72	.05	.78	.03	.76	.02
IsoP	.01	.003	.00	.00	.01	.001
S	.13	.02	.18	.03	.16	.02
P	.07	.01	.06	.01	.07	.01
Agg	.003	.001	.00	.00	.00	.00
Dis	.00	.00	.00	.00	.00	.00

Note: Individuals were observed 7 to 25 times in the group home setting and 7 to 15 times in the day placement.

a N = 40

b N = 31

c Weighted mean of Day and Group Home

+ Means and variances are not combined because a t-test on the means is significant at the .05 level.

Table 2

Means and Variances of Manifest Variables for 159 Developmentally Disabled  
Child and Adult Residents of State Institutions in  
December, 1976

<u>Variable</u>	<u>M</u>	<u>Var</u>
Voc	.09	.01
Comm	.07	.01
Ster	.17	.04
Obj	.33	.07
Envg	.66	.07
IsoA	.76	.03
IsoP	.11	.03
S	.09	.01
P	.04	.004
Agg	.002	.001
Dis	.00	.00

in the institution than in day placements; the mean proportion was larger in the institution than in home placements, but not significantly so. There were small but nonsignificant differences for Vocal and Language Communication. There were no differences for Isolated Active, Aggression or Environmental Disruption. The mean levels of the latter two variables were essentially zero in the institution and they were also nonexistent for all practical purposes in the placement settings.

There were no significant relationships between demographic variables and Phase I Manifest variables.

BDS. ABS records taken at Boulder and Galen were available for 39 members of the Phase I sample. They were completed primarily by ward and cottage personnel, although a few were administered by psychologists. BDS information was abstracted from these records by the authors. It should be noted that information with respect to the ambulation (Appendix II, number 3) and speech (Appendix II, number 5) items was only indirectly available in the ABS and some inferences had to be made as to level of performance. The items dealing with need for seclusion or restraint, history of seizures and medication for them if present, physical aids, and current medication were so infrequently completed and attached to ABS records that no tabulation on them was attempted.

The time period between the most recent ABS in institution files and date of placement ranged from less than a month to nine months. The mean elapsed time was 3.83 months with a standard deviation of 2.33.

A BDS was obtained in the home placement setting for every member of the Phase I sample during January, February or March of 1977. Data were obtained from the staff person or parent in (group or natural) home who was most thoroughly acquainted with the resident. The items dealing with need for

Table 3

Mean Differences and t-Statistics between Manifest Variables from  
December All-Institution Sample and 40 Adults  
Released in First Fourteen Months of Biennium

<u>Variable</u>	<u>Mean Difference</u>	<u>t</u>				
Voc	.04	1.81 N.S.				
Comm	.04	1.83 N.S.				
Ster	-.12	-3.67**				
			<u>Mean Diff.</u>	<u>t</u>	<u>Mean Diff.</u>	<u>t</u>
Obj	-	-	.27 <sup>a</sup>	5.31**	.07 <sup>b</sup>	1.50 N.S.
Envg	-	-	.11 <sup>a</sup>	2.20*	-.05 <sup>b</sup>	-1.09 N.S.
IsoA	.00	<1.00 N.S.				
IsoP	-.10	-4.09**				
S	.07	3.49**				
P	.03	2.47*				
Agg	.00	<1.00 N.S.				
Dis	.00	<1.00 N.S.				

Note: N = 159 for Institutions; N = 40 for Group Homes; N = 31 for Day Placement

a,b Comparisons for Obj and Env g are (Day Placement - Institution)<sup>a</sup> and (Group Home - Institution)<sup>b</sup> rather than combined placement settings since the means for group home and day placement differed significantly for these two variables.

\* Significant at the .05 level

\*\* Significant at the .01 level

N.S. Non-significant

seclusion or restraint, history of seizures and medication for them if present, physical aids, and current medication were only infrequently answered in their entirety, and, since institutional records provided no basis for comparison, no tabulation of them was attempted.

Descriptive statistics summarizing Phase I BDS data from both the institution and placement are set forth in Appendix II. While the statistical material should be thoroughly and carefully read if an accurate image of the Phase I sample is to be constructed, we will provide a brief verbal sketch of the characteristics of this group at the time of their most recent institutional ABS. We will then discuss significant changes observed in the placement setting.

Note that the frame of reference of the modifiers and qualifying phrases in the verbal description below is generally that of the BDS. For example, the first BDS item deals with vision and provides four numbered alternatives for describing it: 4 - No difficulty in seeing; 3 - Some difficulty in seeing; 2 - Great difficulty in seeing; 1 - No vision at all. The median of the distribution of alternatives chosen to describe the members of the Phase I sample is 3.88, and the 25th and 75th centiles of the distribution are 3.61 and 4.16, respectively. In the description below, therefore, the Phase I sample will be sketched as having "little difficulty with vision . . .", etc.

At the time of their latest institutional ABS, the Phase I sample, characterized as a group, had little difficulty with vision, hearing and ambulation. Their preverbal and gestural skills were well advanced, and their vocabularies extended to objects and people beyond their immediate environment. Their speech was generally easily understood and many used sentences involving adverbial clauses and phrases. Most could comprehend a variety of complex

instructions, but they had essentially no reading, writing or arithmetic skills.

The members of the sample were well able to use ordinary table utensils to feed themselves, and their skills with drinking vessels were excellent. While most were not competent to order a meal in a restaurant, obtaining soft drinks and ice cream cones at a soda fountain was within their capabilities.

The level of toilet training among members of the sample was very high as was, correspondingly, competency in self-care at the toilet. Their independent bathing and washing skills were well developed, although the proper use of soap was difficult for some.

Sample members were well able to dress themselves and put on their shoes unaided, but tying laces presented difficulties for about one-third of them. Money handling and shopping and purchasing skills were quite limited, although sense of direction was generally well enough developed that trips to neighborhood stores should have been possible.

In the institutions, the Phase I sample had minimal time-telling ability or appreciation of the coordination of time and daily routine. Insofar as daily routine was concerned, most individuals did some cleaning of their rooms, took moderately good care of their clothing and personal belongings and were able to help with table clearing after meals, but most could not prepare even simple meals or perform jobs of more than minimal complexity even though they had an attention span of fifteen minutes or more. These latter difficulties are consonant with the low level of personal initiative exhibited by most members of the sample.

Interpersonal skills such as recognizing frequently encountered people and knowing the names of classmates or neighbors had attained a fairly high

level, but most members of the sample recalled little information about other people beyond their names. The people in the sample were capable of a moderate amount of interaction with others but most were not spontaneous participants in group activities.

Maladaptive behavior was for the most part an infrequent problem. Occasional rebelliousness or threatening and hostile language were the difficulties most likely to be encountered.

Significance of change from institution to placement setting was determined by means of chi-squared tests. For BDS items where only the most appropriate of several alternatives was used to characterize a particular behavioral domain, institution and placement response distributions were treated as if independent rather than paired because of the relatively small sample size, the necessity to collapse cells to avoid small expected frequencies, and the resultant difficulty in computing the appropriate chi-squared statistic for repeated measures. For items where each appropriate alternative was checked to characterize a behavioral area, change in the frequency with which each alternative was checked in going from the institution to placement was tested separately using the McNemar chi-squared test for paired observations.

Eighteen significant changes in behavior were described by BDS items. Seventeen of the eighteen changes favored the placement setting. The only item the results of which significantly favored the institution ( $\chi^2_{(1)} = 7.69$ ,  $p < .01$ ) was the one concerning walking downstairs by alternating the feet. More members of the Phase I sample walked down stairs in this way while they were in the institution than did in placement.

The remaining changes all favored the placement setting. The frequency with which Phase I sample members were observed to be competent to order meals in public increased ( $\chi^2_{(2)} = 8.69$ ,  $p < .025$ ). Self-care at the toilet improved

in that residents more frequently washed their hands without help ( $\chi^2_{(1)} = 6.75$ ,  $p < .01$ ). Hand and face washing with soap was also more frequent ( $\chi^2_{(1)} = 4.92$ ,  $p < .05$  and  $\chi^2_{(1)} = 6.75$ ,  $p < .01$ , respectively). Residents more frequently hung up clothes without being reminded ( $\chi^2_{(1)} = 7.56$ ,  $p < .01$ ).

Preverbal expression also showed improvement in placement. Residents more frequently used head nodding or smiling to express happiness ( $\chi^2_{(1)} = 6.00$ ,  $p < .025$ ) and those with fewer verbal skills more frequently employed vocal noises or finger pointing to indicate their wants ( $\chi^2_{(1)} = 5.10$ ,  $p < .05$ ).

Complex instructions involving the sequence in which a set of orders were to be carried out were more frequently comprehended ( $\chi^2_{(1)} = 5.06$ ,  $p < .05$ ). This was accompanied by a dramatic increase in the frequency of longer attention spans ( $\chi^2_{(2)} = 14.46$ ,  $p < .001$ ) and an equally dramatic increase in ability to perform more complex tasks ( $\chi^2_{(2)} = 16.47$ ,  $p < .001$ ).

With respect to household routines, residents more frequently cleaned their rooms well ( $\chi^2_{(2)} = 8.76$ ,  $p < .001$ ), prepared both simple foods and complete meals ( $\chi^2_{(3)} = 21.62$ ,  $p < .001$ ), and competently cleared the table of both breakable and unbreakable items after meals ( $\chi^2_{(1)} = 23.19$ ,  $p < .001$ ).

Phase I sample members considerably increased their frequency of interaction with others in group activities ( $\chi^2_{(2)} = 7.08$ ,  $p < .05$ ). In particular, they much more frequently took a role in initiating such activities ( $\chi^2_{(2)} = 29.04$ ,  $p < .001$ ).

Two aspects of maladaptive behavior showed significant declines in reported frequency. Threatening or doing physical violence became much rarer ( $\chi^2_{(1)} = 9.86$ ,  $p < .001$ ), and untrustworthy behavior such as lying, cheating or taking another's property dropped to a negligible frequency ( $\chi^2_{(1)} = 9.73$ ,  $p < .001$ ).

### III. PHASE II

## PHASE II

### Method and Results

#### Subjects

Twenty-five developmentally disabled children and adults were placed in community settings between January 1, 1977 and June 30, 1977. One of these individuals was retained in a day program at his institution and was excluded from the sample on that basis; a second was taken on vacation by the group home parents during the evaluation period and was not available for observation. The Phase II sample consisted of the remaining 23 individuals.

Demographic variables. The mean age of these 12 males and 11 females was 33.04 years with a standard deviation of 24.81. These statistics are somewhat deceptive with respect to central tendency in that the age distribution was fairly flat. Eleven members of the sample were teenagers or preteens and six were between 50 and 80. Of the remaining six people, two were in their twenties, two were in their thirties, and two were in their forties.

Each person in the sample had a medical diagnosis of mental retardation and fell into one of seven relatively broad subcategories. Two were classified as having cephalic anomalies; five were victims of Down's syndrome; three were listed as syndromes associated with rubella during pregnancy; two were afflicted by unclassified congenital anomalies; one was diagnosed as birth trauma; four were associated with generalized arteriosclerosis; and six were listed as unknown. More than one subcategory was listed for several individuals. Only the primary subcategory was used to describe them here.

Placement settings. Ten people were placed in community settings from Boulder, eight were from Galen, and five were from the State School for the

Deaf and Blind in Great Falls. All of these individuals had originally been residents of Boulder. The sample members were placed in 12 communities situated primarily in the western and central parts of the state: Billings, Butte, Choteau, Conrad, Cut Bank, Dillon, Great Falls, Hamilton, Helena, Kalispell, Libby, and Livingston. Ten people were placed in Great Falls and either one or two in each other city or town. Twenty-one individuals were situated in group homes, one was in a foster home, and one was in the natural home. The mean elapsed time between community placement and evaluation was 10.83 weeks with a standard deviation of 9.65.

Fifteen community placement residents were participating in day programs, and explicit plans had been made to enroll six others. The day programs were generally sheltered workshops, educational advancement or remediation programs, or, most commonly, a combination of the two.

Comprehensive social services were available to the residents of virtually every placement setting, and more than half had access to a full range of medical, rehabilitative, and educational services through either contractual arrangements, community facilities, or volunteer efforts.

The residential staff (including house parents, counselors and helpers on shift during late afternoon and evening hours) to resident ratio ranged from 2.5:1 to 1:8. The educational attainments of staff persons varied from a tenth grade education to the doctoral level with a mean of approximately 14 years. Amount of specialized training in working with the developmentally disabled ranged from one week to five years with a mean of about six months. This latter distribution is bimodal and includes half-a-dozen individuals with four or five years' training and 12 or 15 with minimal pertinent background. Mean values for characteristics of placement staff are stated in approximate

terms because overlapping shifts, ad hoc divisions of duties, and a moderate rate of turnover make precise calculations impossible.

None of the relationships (correlations or contingencies) between any pair of the broadly categorized "demographic" or "placement setting" characteristics was significant except the correlation between age and sex, and this may be considered trivial, since it is due to the fact that four very elderly women were placed while only one man of comparable age was selected for community placement.

#### Behavioral assessment

Manifest. Observations using the Manifest were made in Boulder, Galen and Warm Springs during December, 1976. Each resident was observed a total of 12 to 15 times (except one who was observed 10 times) by one of two experienced observers whose interrater reliability was always greater than .95 as long as the number of observations per resident was 10 or more. Interrater reliability, calculated as

$$\frac{\text{number agree} - \text{number disagree}}{\text{total observations}}$$

did not drop below .90 unless fewer than six total observations per resident were made. The elapsed time between successive observations on a sample member was kept as uniform as possible and ranged from four to 20 minutes.

Nine members of the Phase II sample were absent from the institutions during the December period: six were on home furloughs or visits to potential placements and three were hospitalized. Thus, data are available on 14 people in institutional settings.

Manifest observations in group, foster or natural homes were made on all 23 sample members during July, 1977 by a third observer who trained with the

original two until her interrater reliability with each of them was at least .95 for ten observations. Each resident was observed 10 times in the home setting during the late afternoon or early evening. The elapsed time between successive observations was kept as uniform as possible and ranged from four to six minutes.

Observations in day placements were not possible for the eight people not yet enrolled. Ten observations of each of the 15 enrolled sample members were made by the third observer in day placement settings during the late morning or early afternoon. Taking into account the overlap between these 15 people and the individuals for whom December Manifests were missing, there were 12 persons for whom Manifest data from all three settings were available.

Means and variances for the Manifest variables are listed separately in Table 4 for the institutional setting, the (group, foster or natural) home placement and the day placement. The abbreviations Voc, Comm, Ster, Obj, Env, IsoA, IsoP, S, P, Agg, and Dis are used in the tables in referring to these variables. Differences between home and day placement values were subjected to  $t$ -tests based on the entire sets of data available rather than only paired values and, except in two cases, were pooled since the means did not differ significantly. The pooled values are also given in Table 4. The means of variables Stereotypic and Environmental Engagement did differ significantly ( $t(36) = 2.96$ ,  $p < .05$  and  $t(36) = -2.42$ ,  $p < .05$ , respectively), and hence pooled values were not calculated.

Means differences between institutional and placement settings together with  $t$ -statistics are listed in Table 5 for each Manifest variable. The mean proportion of occasions when the behavior in question was recorded over the 10 to 15 observations increased significantly from institution to placement for

Vocal, Language Communication, Object Manipulation and Staff Social Interaction; it decreased significantly for Isolated Active. The proportion decreased significantly between institution and day placement but not between institution and home placement for Stereotypic; it increased significantly between institution and day placement but not between institution and home placement for Environmental Engagement; there were small but nonsignificant increases for Isolated Passive and Peer Social Interaction. There was no change for either Aggression or Environmental Disruption: the mean levels of these two variables were zero in the institutions and they remained so in placement.

There were no significant relationships (correlations or contingencies) between demographic variables and any of the changes from institution to placement in Manifest variables. Specifically, there was no significant correlation between time since placement and change in Stereotypic even though the overall mean level of Stereotypic did shift significantly downward from institution to day placement. From conversations with group home personnel, it appears that this drop occurred almost immediately upon placement.

BDS. ABS records taken in the institutions were available for 21 members of the Phase II sample. They were completed primarily by ward and cottage personnel, although most of those from Galen were administered by psychologists. BDS information was abstracted from these records by the authors. It should be noted that information with respect to ambulation (Appendix III, number 3) and speech (Appendix III, number 5) items was only indirectly available in the ABS and some inferences had to be made as to level of performance. The items dealing with need for seclusion or restraint, history of seizures and medication for them if present, physical aids, and current medication were so infrequently completed and attached to ABS records that no tabulation on them was attempted.

Table 4

Means and Variances of Manifest Variables for  
Developmentally Disabled Adults and Children  
Released in Last Six Months of Biennium

<u>Variable</u>	<u>Institution<sup>a</sup></u>		<u>Placement-<sup>a</sup> Group Home</u>		<u>Placement-<sup>b</sup> Day</u>		<u>Placement-<sup>c</sup> Combined</u>	
	<u>M</u>	<u>Var</u>	<u>M</u>	<u>Var</u>	<u>M</u>	<u>Var</u>	<u>M</u>	<u>Var</u>
Voc	.12	.02	.41	.04	.35	.06	.39	.05
Comm	.09	.01	.31	.05	.39	.09	.34	.07
Ster	.18	.07	.22	.07	.04	.01	+	+
Obj	.48	.07	.61	.06	.76	.05	.67	.06
Envy	.53	.06	.56	.12	.80	.07	+	+
IsoA	.84	.02	.43	.04	.38	.09	.41	.06
IsoP	.03	.003	.14	.02	.09	.03	.12	.02
S	.10	.01	.36	.06	.41	.08	.38	.07
P	.05	.005	.07	.02	.19	.08	.12	.04
Agg	.00	.00	.02	.01	.03	.01	.02	.01
Dis	.00	.00	.01	.02	.01	.003	.01	.01

Note: Individuals were observed 12-15 times in institutional settings (with the exception of one individual who was observed 10 times) and 10 times in each placement setting.

a N = 23

b N = 15

c Weighted mean of Day and Group Home

+ Means and variances are not combined because a t-test on the means is significant at the .05 level.

Table 5

Mean Differences and t-Statistics between Manifest Variables from  
Institution to Combined Placement Settings for 12 Adults and  
Children Released in Last Six Months of Biennium

<u>Variable</u>	<u>Mean Difference</u>	<u>t</u>				
Voc	.20	5.35**				
Comm	.23	4.80**	<u>Mean Diff.</u>	<u>t</u>	<u>Mean Diff.</u>	<u>t</u>
Ster	-	-	-.17 <sup>a</sup>	-2.21*	-.13 <sup>b</sup>	-1.66 N.S.
Obj	.21	3.45**				
Envg	-	-	.27 <sup>a</sup>	2.37*	.05 <sup>b</sup>	<1.00 N.S.
IsoA	-.37	-6.54**				
IsoP	.08	2.07 N.S.				
S	.25	5.46**				
P	.07	1.75 N.S.				
Agg	.00	<1.00 N.S.				
Dis	.00	<1.00 N.S.				

Note 1: N = 12 for each variable (the children and adults for whom data in all three locations were available)

Note 2: The significance of each mean difference is based upon a t-test for correlated observations

<sup>a, b</sup> Comparisons for Ster and Env g are (Day Placement - Institution)<sup>a</sup> and (Group Home - Institution)<sup>b</sup> rather than combined placement settings since the means for group home and day placement differed significantly for these two variables.

\* Significant at the .05 level

\*\* Significant at the .01 level

N.S. Non-significant

The time period between the most recent ABS and date of placement ranged from less than a month to slightly more than two years, with most records being less than one year old. The mean time period between most recent ABS and the July, 1977 assessment was 14.53 months with a standard deviation of 8.12. Although this interval is longer than is desirable, the results of an auxilliary study by the authors argue that it is not crucial.

A random sample of 20 institution residents was selected from among those for whom placement was scheduled and for whom ABS records spaced 11 to 13 months apart were available. Differences between the means of each domain on the earlier and the later occasion were subjected to t-tests for correlated observations. None was significant. The ABS and, by implication, the BDS would appear to be quite stable over at least one year's time span. Since the BDS is shorter than the ABS, it could be argued by extension of the usual reliability considerations that it should be less stable. Both the brevity of the ABS scales themselves and the pattern of results to be reported below weigh heavily against such a conclusion.

A BDS was obtained for every member of the Phase II sample during July, 1977, by which time they had all been placed. Data were obtained from the staff person or parent at the (group, foster or natural) home who was most thoroughly acquainted with the resident. The items dealing with need for seclusion or restraint, history of seizures and medication for them if present, physical aids, and current medication were only infrequently answered in their entirety and, since institutional records provided no basis for comparison, no tabulation on them was attempted.

Descriptive statistics summarizing Phase II BDS data from both the institution and placement setting are set for in Appendix III. While the statistical

material should be thoroughly and carefully read if an accurate image of the Phase II sample is to be constructed, we will attempt to provide a brief verbal sketch of the characteristics of this group at the time of their most recent institutional ABS. We will then discuss the significant changes observed in the placement setting.

Note that the frame of reference of the modifiers and qualifying phrases in the verbal description below is generally that of the BDS. For example, the first BDS item deals with vision and provides four numbered alternatives for describing it: 4 - No difficulty in seeing; 3 - Some difficulty in seeing; 2 - Great difficulty in seeing; and 1 - No vision at all. The median of the distribution of alternatives chosen to describe the members of the sample is 3.55 and 25th and 75th centiles of the distribution are 3.00 and 4.02, respectively. In the description below, therefore, the Phase II sample will be sketched as having "relatively little difficulty with vision . . .", etc.

At the time of their latest institutional ABS, the Phase II sample, characterized as a group, had relatively little difficulty with vision, hearing, and ambulation. Although their preverbal and gestural skills were reasonably well developed, their level of verbal functioning was low. Generally, their vocabularies were largely limited to the names of familiar objects, even simple sentences were difficult for them to produce, and their speech was hard to understand. They had essentially no reading, writing, or arithmetic skills, and fewer than half could follow instructions of any appreciable degree of complexity.

The members of the sample were able to feed themselves with fork and spoon neatly and to make some use of the knife as a table utensil. Their skills with drinking vessels were excellent, and, while most were not competent to order a

meal in a restaurant, obtaining soft drinks and ice cream cones at a soda fountain was within their capabilities.

The level of toilet training was high, and the sample was fairly competent in self-care at the toilet. Their bathing and washing skills were acceptable, although their competence with soap was not great.

Members of the sample were well able to dress themselves and put on their shoes, although tying laces was a hurdle more than half could not clear. Money handling and purchasing skills were severely limited as was sense of direction, so that most were limited to the cottage or ward or the area close by.

In the institution the Phase II sample had very little time-telling ability or appreciation of the coordination of time and daily routine. Insofar as daily routine was concerned, most did not clean their rooms, prepare even simple food, clear the table after a meal, take reliable care of personal belongings, or perform jobs of even minimal complexity even though most had an attention span of at least ten minutes and were capable of some initiative in undertaking routine tasks.

Interpersonal skills were not well developed, although most individuals recognized people they saw frequently. They were capable of some non-imitative interaction, but tended to refrain from group activities unless encouraged to participate.

Maladaptive behavior was for the most part only an occasional problem. The single exception was stereotypic actions, which occurred with considerable frequency.

Significance of change from institution to placement center was assessed by means of chi-squared tests. For BDS items where only the most appropriate of several alternatives was used to characterize a particular behavioral area,

institution and placement response distributions were treated as if independent rather than paired because of the relatively small sample size, the necessity to collapse cells to avoid small expected frequencies, and the resultant difficulty in computing the appropriate chi-squared statistic. For items where each appropriate alternative was checked to characterize a behavioral domain, change in the frequency with which each alternative was checked was tested separately using the McNemar chi-squared test for paired observations.

Each significant change described by BDS items favored the placement setting. There was an increased frequency of observations of better body balance ( $\chi^2_{(2)} = 11.22, p < .005$ ). Residents were more often observed to wash their hands with soap ( $\chi^2_{(1)} = 4.00, p < .05$ ) and exhibited increased competence in bathing themselves ( $\chi^2_{(2)} = 9.36, p < .01$ ). They more frequently wiped and polished their shoes when needed ( $\chi^2_{(1)} = 4.90, p < .01$ ). Use of gestural or preverbal signs to indicate hunger increased ( $\chi^2_{(1)} = 5.10, p < .025$ ).

In addition, there was a consistent pattern of increased participation in daily living tasks. Residents more frequently exhibited substantial participation in food preparation ( $\chi^2_{(1)} = 8.18, p < .005$ ) and table clearing ( $\chi^2_{(2)} = 7.20, p < .05$ ) and did a better job of cleaning their rooms ( $\chi^2_{(1)} = 7.47, p < .01$ ).

#### Evaluation of placement process

The placement process was evaluated in terms of the Phase II sample, whose members had been placed more recently. The focus of the evaluation was not the components or efficiency of the process, but its outcome, that is, the satisfaction which group home staffs expressed with respect to the people placed in their homes.

For each of the 23 Phase II sample members, group home staff members were questioned via a semi-structured interview procedure. The focus of the questions was their satisfaction in terms of convictions and feelings about the congruence between needs of the residents in their homes and the advantages which the home and the community in which it was situated could offer them. In only a single case was there a clear-cut conviction shared by staff members that a particular resident should not have been placed in their group home.

#### IV. DISCUSSION AND CONCLUSIONS

### Discussion and Conclusions

The results of the behavioral assessments of the Phase I and Phase II samples are favorable to the State of Montana's deinstitutionalization program for the developmentally disabled. We will first discuss this conclusion and its limitations for the 40 adults who were placed in the initial 14 months of the 1975-77 biennium and then for the sample of 23 adults and children placed in the last six months of the biennium.

Before discussing particular results, it should be noted that both samples were of sufficient size to allow inferences to be made about the parent populations with considerable confidence. The Phase I sample consisted of 40 individuals; they constituted more than a third of the population of developmentally disabled people who were released in the first 14 months of the biennium. While two restrictions were made on the selection of the sample, there is no reason to believe that these factors should have biased conclusions about the behavioral competencies investigated.

The Phase II sample consisted of 23 of the 25 developmentally disabled people who were released in the last six months of the 1975-77 biennium. From the point of view of representing placement outcomes during that six month period, since sample is such a large proportion of the target population and since no restrictions were placed on its selection, it certainly should provide representative results. A very pertinent question here, however, is whether the Phase II sample adequately represents the remainder of the State of Montana's developmentally disabled population for which community placement (exclusive of nursing homes) is planned. Since the Phase II sample may have contained a greater proportion of relatively high functional individuals

than does the remaining institutionalized population, the results from this sample may overpredict the success of the outcome for the residents remaining in Boulder, Galen and Warm Springs.

Except for a single item, the results of the assessment of the Phase I sample with the BDS are strongly favorable toward placement. Not only do the number and magnitude of favorable changes in behavior observed in the placement setting argue for the superiority of the community situation over the institution, there is also a pattern apparent in the changes which helps to clarify those aspects of the community placement which are beneficial.

The key factors appear to be the balance of self reliance and mutual interdependence required for successful functioning in a group home. That is, the adults in the Phase I sample exhibited an increase not only of the frequency of their interaction in group activities, but also showed an increased tendency to initiate such activities. One of the most important communal activities in the group home is meal preparation. The involvement of residents in preparing meals and in clearing the table afterward showed a sizeable increase. Whether such improvements might be the cause or the effect of an increase in attention span and an improved ability to understand and perform complex tasks is arguable, but the fact of these concomitant increases cannot be doubted. Increased communication might also be expected to accompany greater involvement in communal activities, and, indeed, less verbally capable residents did more often use head nodding, smiling, pointing and vocal noises to express their feelings or needs. Finally, increased competence in food preparation seems to have generalized to greater facility in ordering meals in public.

With respect to self-reliance, group home residents must accept much of the burden of taking care of their personal needs. The adults in Phase I more

frequently cleaned their rooms well and hung up their clothes without being reminded than they did in the institutions. Their ability to care for themselves at the toilet improved as did their attention to washing hands and face and the use of soap to do so.

It could be argued that if an increased call upon developmentally disabled adults to care for themselves and cooperate with others in communal tasks was frustrating, their rate of maladaptive behavior would increase. Just the opposite happened. Although maladaptive behavior was not an appreciable problem to begin with for the Phase I sample, both the tendencies to threaten or do physical harm to others and to lie, cheat, or steal decreased. These results argue against frustration among members of the sample, and thus, indirectly, indicate increased satisfaction in community placements.

There are, of course, simpler explanations for the improvements in behavior observed among the members of the Phase I sample in community placements. Expectancy has been shown to be an important shaper of behavior in group situations, and it might be argued that the transmission of such expectations to residents by members of the staff of the group home together with appropriate shaping and training could be the entire cause of the changes observed.

An even simpler explanation is possible. As was mentioned in the Introduction, residents have little need (or sometimes opportunity) to care for themselves in institutional settings. What they do not do for themselves will be done for them. A more intelligent individual may learn this and capitalize upon it, so that such abilities as residents have may even atrophy through disuse. But in group homes self-care and communal efforts are both necessary and encouraged as an integral part of the philosophy of such establishments. Opportunities for individual effort and group participation abound, and, indeed,

are created by the staff. It may be that the primary requirement for an increase in independent living skills among the developmentally disabled is an environment with room for those skills to be developed and exhibited.

Which of these alternative explanations best accounts for the results observed in this study is a question separate from the one we have posed, which asks simply whether changes in behavior do occur when developmentally disabled individuals are deinstitutionalized. It is also beyond the scope and resources of this investigation, and the reader must decide for himself which explanation is best supported by the available data.

Before proceeding to a discussion of the results of the Manifest, a more technical problem affecting interpretation of results should be examined. Since the BDS is completed for each resident by a staff member who knows him well, halo or response set effects are possible. For example, a staff member who has a favorable opinion of a given resident may have a set to rate him as highly as possible on every BDS item even though his actual behavior might not merit such ratings. The point is not that the staff member is intentionally deceptive when rating the resident, but that his overall high opinion of the person causes him to view the person's entire range of responses as better than a more objective analysis would make them. A staff member with a negative opinion of a resident might similarly rate the individual lower than deserved on the items of the BDS. We do not have hard data bearing upon this question. However, in order to obtain some idea of the probability of such bias in our results, we compared the BDS completed in the institution with the one from the placement setting for each individual. The similarity between the two BDSs across the entire sample was impressive. The only obvious discrepancies were those items where significant changes took place. A definitive approach

to the problem of response set bias in the BDS would require a factor analysis of a larger sample of BDSs than was available, but one may acquire a somewhat similar perspective by comparing the quartiles of the distributions from the institution and the placement across the entire set of items. Examination of these statistics in Appendix II shows a very considerable similarity across items which would tend to discount the probability of response set bias.

One advantage of assessment instruments such as the Manifest is their much smaller vulnerability to extraneous influences such as response sets. Judgements are made, not of general level of ability or performance in a given area, but of specific segments of behavior. Moreover, the descriptions to be applied are not relatively global as in most inventories such as the BDS; instead a categorization based upon quite concrete definitions is made. The resulting conclusions are more likely to be objective and amenable to replication. The interrater reliability of the Manifest in this study, for example, was not below .95 in any setting.

It is encouraging, then, in assessing the validity of the BDS results that the outcome of the Manifest analysis is also favorable for the Phase I sample. Stereotypic behavior, that hallmark of the institutionalized person, was significantly lower for the placed Phase I sample than for the general institutional sample. The isolated, uninvolved, often somnambulistic behavior that the Manifest dubs Isolated Passive was also at a significantly lower level. Social interaction with both peers and staff were observed a significantly greater proportion of the time in the members of the Phase I sample than in the general institutional group. Vocal behavior and Language Communication were exhibited at a higher level, though not significantly so, among members of the Phase I sample. The levels of aggressive and disruptive behavior were at

essentially the same level - zero - for both samples. Nor was there detectable difference between the two samples with respect to Isolated Active behavior.

The picture is somewhat more complicated for Object Manipulation and Environmental Engagement. Object Manipulation and Environmental Engagement were both significantly higher for the Phase I sample when in the day placement setting than they were for the institutional sample; but there was not a significant difference between the two groups when the Phase I sample was assessed in the group home setting. We conclude that day settings such as sheltered workshops provide a kind of active relationship with the environment, at least in relative terms, that the institution cannot.

The comparisons involving the Manifest for the Phase I sample and the general institutional sample have the disadvantage that one is not contrasting the same group with itself in two different situations; instead, two groups, each in a different situation, are being weighed against each other. If one had reason to believe that the two groups were fundamentally similar and equal in capacity, the comparisons could be largely justified. However, since deinstitutionalization in Montana began with the placement of many of the highest functional residents of the institutions, the remaining individuals who resided in Boulder, Galen and Warm Springs in December, 1976 were probably less capable in many respects than those already placed in the community. Thus, the advantages exhibited for the deinstitutionalized group by the Manifest lose some of their force.

This argument may also be turned around to suggest that the Manifest results (as well as those of the auxilliary study of the stability of the ABS mentioned under Phase II results) are evidence that the individuals remaining in the institutions have not, due to a general improvement in conditions of

care and treatment or some similar factor(s), attained the same level of performance as those people who were placed in the community. This conclusion is also weakened by the dissimilarities in the general institutional sample and the Phase I group. This is unfortunate, since such a finding is crucial to any final vindication of deinstitutionalization: moving people into community settings would present few advantages if their development and performance improved to the same level with added time in an institution.

We do not disregard the Manifest comparisons because of some dissimilarity between the two samples, however, since they are supported by the general tenor of the BDS results, just as the Manifest results support the BDS. Moreover, we are not confined to such circular reasoning; the results of the Manifest for the Phase II sample, in which the same group is compared with itself in the institution and the placement setting, are similar to the Phase I results and even perhaps slightly stronger (as might be expected given a better basis of comparison).

Turning now to the 23 children and adults who were deinstitutionalized in the last six months of the 1975-77 biennium, we first discuss the Manifest results. Stereotypic behavior was at a significantly lower level in the day placement than in the institution for the Phase II sample; there was not a significant difference between group home and institution, however. In fact, the level was slightly higher in the group home (22%) than in the institution (18%). Conversely, Environmental Engagement was significantly higher in the day placement than in the institution, but there was not a significant difference between group home and institution. The levels of Vocal behavior, Language Communication, and Object Manipulation were all significantly higher in the placement setting than in the institutions. Isolated Active behavior decreased significantly and by more than one-third in the placement setting

from its level in the institution. Staff Social Interaction was significantly higher in placement settings than in the institution; Peer Social Interaction was higher in placement settings than in the institutions, but not significantly so. As with Phase I, the levels of Aggression and Environmental Disruption did not change, being at an essentially zero level in both institution and placement.

While the pattern of differences between institution and placement for Manifest variables are reasonably similar for the Phase I and Phase II samples, the magnitudes of the differences and the differences which are significant vary considerably for the two groups. Given the relatively small size of the sample upon which the Phase II t-tests are based and the different samples upon which the Phase I t-tests are computed, such differences are to be expected as a result of sampling fluctuation.

The results of the assessment of the Phase II sample with the BDS are definitely pro-deinstitutionalization: each of the eight significant differences favors the placement setting. Moreover, the observed changes are, as far as they go, similar to changes found in the Phase I sample. In the group home setting, Phase II sample members exhibit increased competency in meal preparation and table clearing. They take better care of their rooms and their shoes than they did in the institution. Their bathing skills and use of soap are more frequently seen as improved. They are more likely to use gestural or other preverbal cues to indicate hunger, and their body balance appears to have become better.

One difficulty with this set of results is that, given the 98 tests of significance performed, five significant results (with alpha equal to .05) would have been expected by chance alone. Eight is hardly more than five, and it is largely because of the similarity of these results to those of the

Phase I sample that we take them seriously. It can also be argued that the Phase II sample exhibits fewer improvements over its institutional level than did the Phase I sample because of the much shorter average elapsed time since placement and lesser opportunity for development. But it may be that the Phase II sample members represent a lower functioning group than the Phase I sample (who were probably the most capable members of the original institutional population of developmentally disabled people) and much less extensive development would be expected of them. This brings into direct focus a most important question: to what extent are improvements in behavioral capacity following deinstitutionalization determined by initial capacity, and to what extent are improvements a function of longer exposure to the advantages of community placement? Since these two variables are confounded in the Phase I and Phase II samples, only further research can provide an adequate answer to this question.

In both the Phase I and Phase II samples, demographic, medical and familial variables as well as those associated with placement characteristics exhibited no relationships to the behavioral outcome variables. It may be that such relationships are simply non-existent, but two other factors may have contributed to the lack of findings. One is the fact that while most institutional files for residents are now in exemplary condition, entries for earlier years are frequently scant and even self-contradictory. Data bearing upon familial variables, for example, were often nonexistent and that which was present had never been updated. Thus the quantity and reliability of medical, familial and demographic data were both considerably less than would have been desirable.

As far as variables related to placement settings are concerned, problems of a different sort were found. Services available to clients may be formally considered to be those for which contracts or other legal or quasi-legal bases exist. Yet when there are no such provisions for services, they are often

obtained through other "invisible" sources such as volunteer contributions or general community facilities. Thus a formal description of services available to clients in a given placement can differ substantially from a functional description. Where staff characteristics are involved, various informal relationships and procedures make even such straightforward measures as average level of pertinent training nearly impossible to quantify. For example, a husband may be officially on the payroll of a group home, yet his wife may work one quarter of his shifts and his sister another quarter in an irregular rotation. Such arrangements are common in group homes in the state and effectively preclude accurate measurement of many staff characteristics which might relate to outcome variables.

With respect to the process by which institutional residents are placed in particular group homes, one must conclude that it functions in nearly all cases to the satisfaction of group home staffs. As mentioned above, the efficiency of the process was not evaluated.

Finally, both the Phase I and Phase II samples were of sufficient size to represent with confidence the populations from which they were drawn. While the number of observations upon which Phase II statistical tests were based was not as large as is optimally desirable, there was no evidence that the assumptions of either the t-tests or chi-squared tests were violated to any appreciable extent. Therefore, the results of the tests may be accepted with some confidence.

In summary, upon weighing both the evidence presented and its technical and practical limitations, we conclude that the State of Montana's deinstitutionalization program for the developmentally disabled must be termed at least a limited success. Both the 40 adults who were placed in community settings in the first 14 months of the 1975-77 biennium and the 23 adults and children

who were placed in the last six months of the biennium show substantial indications of increased competence in a variety of behavioral domains. Improvement was less dramatic for the sample released later in the biennium, but this may be due either to lesser initial capacity or a shorter exposure to the beneficial effects of community placement.

In qualification of this general conclusion, two things should be noted. First, only evidence of an imperfect kind is available to demonstrate that deinstitutionalization was better than a longer stay in institutions in which care and treatment conditions may have undergone appreciable improvement. Second, no formal assessment of resident satisfaction with community placement was attempted. From their statements and comments there is no doubt that staff members of the institutions and community placements take great personal satisfaction in the results of deinstitutionalization, but the matter is not so clear cut for the residents. As many of them stated to us that they missed friends or routines at the institution as expressed happiness with their new surroundings. From a purely functional and behavioral point of view, however, there is little doubt as to the efficacy of Montana's program for deinstitutionalization of the developmentally disabled. Essentially no behavioral domain showed degradation from the levels found in the institution, and a great many exhibited important improvements.

## V. SUMMARY

### Summary

This study was designed for the purpose of evaluating the effectiveness of the State of Montana's program of deinstitutionalizing developmentally disabled persons. The primary focus of the study was assessment of changes in behavior associated with movement out of the institutions and into community settings such as group homes in conjunction with day activity centers such as sheltered workshops.

The behavior in question was carefully defined to include skills basic to and important for successful functioning as a member of an independent community living group. These skills were assessed by means of two behavioral assessment instruments, the Resident Activity MANIFEST and the Behavior Development Survey. The former instrument addresses thematic variables important for successful living in both institutions and placement settings and utilizes an instantaneous time sampling technique. The latter instrument uses an inventory approach and focuses upon quite specific skills.

The relationships of demographic, medical, familial and related variables to behavior changes associated with deinstitutionalization were investigated, and an evaluation was made of the process by which individual residents of institutions were chosen for placement in particular community settings.

Two sets of deinstitutionalized persons were evaluated. The first was a sample of 40 developmentally disabled adults moved from institutions to community settings during the first 14 months of the 1975-77 biennium. The second was a group of 23 developmentally disabled adults and children who were deinstitutionalized during the last six months of the biennium.

The evidence from the Resident Activity MANIFEST and the Behavior Development Survey clearly supports the conclusion of at least limited success for

the deinstitutionalization program. Results were more striking for the sample deinstitutionalized earlier in the biennium than for the later one, but similar patterns of improvement obtained for both groups. Reasons for this difference and limitations upon the primary conclusion were discussed.

No relationships were discovered between demographic, medical, familial or placement setting variables and behavioral outcomes. Probably reasons for this situation were examined.

The focus of the evaluation of the process by which deinstitutionalized individuals are placed in particular community settings was staff satisfaction with the placement. In only one of 23 instances was there a clear-cut conviction shared by staff members that an inappropriate placement had been made.

### References

- American Association for Mental Deficiency. Ad hoc Committee on the Adaptive Behavior Scale. 5201 Connecticut Avenue N.W., Washington, D.C. 20015
- Bachrach, L.L. Psychiatric bed needs: An analytical review. Mental Health Statistics Series D, No. 2. Rockville, Md.: National Institute of Mental Health, 1975a.
- Bachrach, L.L. Marital status and mental disorders: An analytical review. Mental Health Statistics Series D, No. 3. Rockville, Md.: National Institute of Mental Health, 1975b.
- Bachrach, L.L. Deinstitutionalization: An Analytical Review and Sociological Perspective, DHEW Publication No. (ADM) 76-351, Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402, 1976.
- Becker, A., and Schulberg, H.D. Phasing out State hospitals - a psychiatric dilemma. New England Journal of Medicine, 1976, 294, 255-261.
- Begab, M.J., and Richardson, S.A. (Eds.) The mentally retarded and society: A social science perspective. Baltimore: University Park Press, 1975.
- Beslanwitch, J.J., and Swenson, R.P. Observations of a group home living environment. Unpublished manuscript. 1976. (Available from J.J. Beslanwitch, c/o Department of Psychology, Drake University, Des Moines, Iowa.)
- Cataldo, M.F., and Risley, T.R. Evaluation of living environments: the MANIFEST description of ward activities. In P.O. Davidson, F.W. Clark, and L.L. Hamerlynck (Eds.), Evaluation of behavioral programs. Champaign, Ill.: Research Press, 1974.
- Feldman, S. Ideas and issues in community mental health. Hospital and Community Psychiatry, 1971, 23, 325-329.
- Hersch, C. Social history, mental health, and community control. American Psychologist, 1972, 27, 749-754.
- Herz, M.I. Views on the current role of psychiatric hospitalization. Hospital and Community Psychiatry, 1972, 23, 210-211.
- Kramer, M. Epidemiology, biostatistics, and mental health planning. In Monroe, R.R., Klee, G.D., and Brody, E.B. (Eds.) Psychiatric Epidemiology and Mental Health Planning. Research Report No. 22. Washington: American Psychiatric Association, 1967.
- Mechanic, D. Mental health and social policy. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1969.

- Pollack, E.S., and Taube, C.A. Trends and projections in state hospital use. In Zusman, J. and Bertsch, E.F. (Eds.) The Future Role of the State Hospital. Lexington, Mass.: D.D. Heath and Co., 1975.
- Rosenhan, D.L. On being sane in insane places. Science, 1973, 179, 250-258.
- Rotman, I.D. "Position Paper: Adequate Residential and Community-Based Programs for the Mentally Disabled For Submission to the White House Conference on Handicapped Individuals." Philadelphia, Pa.: Horizon House Institute for Research and Development, February 1976.
- Schwartz, D. A non-hospital in a hospital. American Journal of Public Health, 1971, 61, 2367-2382.
- Slovenko, R., and Luby, E.D. From moral treatment to railroading out of the mental hospital. Bulletin of the American Academy of Psychiatry and the Law, 1974, 2, 223-236.
- Taube, C.A. Readmissions to inpatient services of State and county mental hospitals. Mental Health Statistical Notes No. 110, November 1974.
- Zigler, E. Dealing with retardation. (Review of The mentally retarded and society: A social science perspective, edited by M.J. Begab and S.A. Richardson). Science, 1977, 196, 1192-1194.
- Zigler, E. and Balla, D. Motivational factors in the performance of the retarded. In R. Koch and J.C. Dobson (Eds.), The mentally retarded child and his family: A multi-disciplinary handbook (2nd ed.). New York: Brunner-Mazel, 1976.
- Zigler, E., Balla, D., and Butterfield, E.C. A longitudinal investigation of the relationship between preinstitutional social deprivation and social motivation in institutionalized retardates. Journal of Personality and Social Psychology, 1968, 10, 437-445.

## Appendix I

### Specimen BDS and Descriptions of Manifest Categories

(1-2) State	(27) <input type="checkbox"/> a Understands instructions containing prepositions, e.g., "on," "in," "behind," etc.	(42) ATTENTION (Check only one)
(3-5) Agency	(28) <input type="checkbox"/> b Understands instructions referring to the order in which things must be done e.g., "first do --, then do --"	<input type="checkbox"/> 5 Will pay attention to pur activities for more tha minutes, e.g., playing reading, cleaning up
(6-15) Client	(29) <input type="checkbox"/> c Understands instructions requiring a decision: "If --, do this, but if not, do --"	<input type="checkbox"/> 4 Will pay attention to pur activities for at least minutes
(16) Sex <input type="checkbox"/>	(30) <input type="checkbox"/> None of the Above	<input type="checkbox"/> 3 Will pay attention to pur activities for at least minutes
(17-22) Date o	(31) NUMBERS (Check only one)	<input type="checkbox"/> 2 Will pay attention to pur activities for at least minutes
(23) Type o	<input type="checkbox"/> 6 Does simple addition and subtraction	<input type="checkbox"/> 1 Will not pay attention to activities for as long minutes
<input type="checkbox"/> 1 In	<input type="checkbox"/> 5 Counts ten or more objects	(43) PERSONAL BELONGINGS (Check on
<input type="checkbox"/> 2 Re	<input type="checkbox"/> 4 Mechanically counts to ten	<input type="checkbox"/> 4 Very dependable--always t of personal belongings
	<input type="checkbox"/> 3 Counts two objects by saying "one...two"	<input type="checkbox"/> 3 Usually dependable--usual care of personal belong
	<input type="checkbox"/> 2 Discriminates between "one" and "many" or "a lot"	<input type="checkbox"/> 2 Unreliable--seldom takes personal belongings
	<input type="checkbox"/> 1 Has no understanding of numbers	<input type="checkbox"/> 1 Not responsible at all--d take care of personal b
(57) VISION	TIME (Check ALL statements that apply)	AWARENESS OF OTHERS (Check AL that apply)
With	(32) <input type="checkbox"/> a Tells time by clock or watch correctly to the minute	(44) <input type="checkbox"/> a Recognizes own family
<input type="checkbox"/> 4 No	(33) <input type="checkbox"/> b Understands time intervals, e.g., between "3:30" and "4:30"	(45) <input type="checkbox"/> b Recognizes people other t
<input type="checkbox"/> 3 So	(34) <input type="checkbox"/> c Understands time equivalents, e.g., "9:15" is the same as "quarter past nine"	(46) <input type="checkbox"/> c Has information about oth job, address, relation
<input type="checkbox"/> 2 Gr	(35) <input type="checkbox"/> d Associates time on clock with various actions and events	(47) <input type="checkbox"/> d Knows the names of people him, e.g., classmates,
<input type="checkbox"/> 1 No	(36) <input type="checkbox"/> None of the above	(48) <input type="checkbox"/> e Knows the names of people larly encountered
	(37) ROOM CLEANING (Check only one)	(49) <input type="checkbox"/> None of the above
	<input type="checkbox"/> 3 Cleans room well, e.g., sweeping, dusting, and tidying	(50) INTERACTION WITH OTHERS (Chec
	<input type="checkbox"/> 2 Cleans rooms but not thoroughly	<input type="checkbox"/> 4 Interacts with others in or activity
	<input type="checkbox"/> 1 Does not clean room at all	<input type="checkbox"/> 3 Interacts with others for short period of time, e or offering toys, cloth
	(38) FOOD PREPARATION (Check only one)	<input type="checkbox"/> 2 Interacts with others iml little interaction
	<input type="checkbox"/> 4 Prepares an adequate complete meal ( may use canned or frozen foods)	<input type="checkbox"/> 1 Does not respond to other acceptable manner
	<input type="checkbox"/> 3 Mixes and cooks simple food, e.g., fries eggs, makes pancakes, cooks TV dinners, etc.	(51) PARTICIPATION IN GROUP ACTIVI only one)
	<input type="checkbox"/> 2 Prepares simple foods requiring no mixing or cooking, e.g., sandwiches, cold cereal, etc.	<input type="checkbox"/> 4 Initiates group activitie and organizer)
	<input type="checkbox"/> 1 Does not prepare food at all	<input type="checkbox"/> 3 Participates in group act spontaneously and eager participant)
	(39) TABLE CLEARING (Check only one)	<input type="checkbox"/> 2 Participates in group act encouraged to do so (pa participant)
	<input type="checkbox"/> 3 Clears table of breakable dishes and glassware	<input type="checkbox"/> 1 Does not participate in g
	<input type="checkbox"/> 2 Clears table of unbreakable dishes and silverware	
	<input type="checkbox"/> 1 Does not clear table at all	
	(40) JOB COMPLEXITY (Check only one)	
	<input type="checkbox"/> 3 Performs a job requiring use of tools or machinery, e.g., shop work, sewing, etc.	
	<input type="checkbox"/> 2 Performs simple work, e.g., simple gardening, mopping floors, emptying trash, etc.	
	<input type="checkbox"/> 1 Performs no work at all	
	(41) INITIATIVE (Check only one)	
	<input type="checkbox"/> 4 Initiates most of his own activities, e.g., tasks, games, etc.	
	<input type="checkbox"/> 3 Asks if there is something for him to do or explores surroundings, e.g., home, yard, etc.	
	<input type="checkbox"/> 2 Will engage in activities only if assigned or directed	
	<input type="checkbox"/> 1 Will not engage in assigned activities, e.g., putting away toys, etc.	

BEHAVIORAL DEFINITIONS OF TERMS  
USED IN MANIFEST EVALUATION

1. Vocal: The resident is emitting a vocal sound, not necessarily coherent language.
2. Language communication: The resident is using some accepted language form (verbal, gestures, language boards, some need or expression) to request attention or aid, or to respond to the request of some other person. This does not include the performance of the requested response unless the request is for verbal response. The language must be coherent and functional. "Appropriate" could be substituted for "functional." For instance, if the resident says "I used to work in Pine," to no one in particular, or with no logical context, it would not be considered language communication.
3. Stereotypic: For the most part, this includes nonfunctional repetitive movements. Also includes nonrepetitive, bizarre postures. Included in this category are whole body movements (body rocking, twirling), repetitive head movements (head rolling, head banging), nonrepetitive behaviors (limb and body posturing), repetitive self abuse (digit sucking, eye poking and gouging, self-biting), repetitive complex hand movements, repetitive manipulations of objects and repetitious utterance of meaningless sounds. This is the most difficult category to achieve reliability on because it involves observation beyond the instant that you observe. In order to establish whether an action is repetitive, you must consider how often the action occurs beyond that instant.
4. Object manipulation: The resident is in contact with some manipulable object. "People" are not "objects." If the object is being worn, i.e., shoelaces or shirt, do not count a plus. Movement toward an object doesn't count -- contact must be made at the instant of observation. "Action" is an important distinction between object manipulation and environmental engagement. If the resident is actively moving the object or trying to move the object, then it's a plus. For instance if the resident is pushing a chair, it's a plus. If he's only leaning on the chair, it's a minus for object manipulation and a plus for environmental engagement. If the resident is holding an object, no action is necessary in order to count a plus for object manipulation. Rocking a chair is object manipulation.
5. Environmental engagement: The resident is in or on some object or furniture. This refers to "physical" engagement rather than "social." You can score a plus for EE if the resident is in close proximity of a tv or a mirror and is looking directly at the tv or mirror. The object or furniture cannot be permanent features of the environment such as radiators, walls or window sills. Object manipulation is a sub-category of EE, so if you score a plus in object manipulation you must also score a plus in EE.
6. Isolated active: The target resident is not in physical contact with any other person; he is not engaged in the mutual completion of any mutual tasks, but is engaged in some sort of activity. Example: walking down hall.

7. Isolated passive: The resident is not in physical contact with any other person, is not engaged in the mutual completion of any tasks with any other person, is not actively involved in the manipulation of any object, is generally motionless, generally uninvolved with any ongoing activities, and is not attempting to communicate with another person. Examples: nap or asleep.
8. Staff social interaction: One or more staff members in physical contact with the target resident, or attempting to establish contact with the resident by calling name and (implied) command, or involved in the mutual completion of some task with the resident. The staff person must be attending to the resident. For instance in a group activity such as playing ball with several residents, the staff member must be attending to the resident being observed at the instant of observation. Simply being in the group does not constitute staff social interaction unless the staff member and the residents are clearly acting toward the mutual completion of a task, or the staff member is attending directly to the resident being observed. If the resident is passive or is not involved in the same activity as the staff member, it's not SSI.
9. Peer social interaction: Two or more residents involved in the mutual completion of some task, or in physical contact with each other, or attempting to establish contact with another resident by signaling or calling out name. Peer social interaction and staff social interaction are not mutually exclusive. Peer social interaction also includes having established contact with another resident. For instance, if two residents are in close proximity and are clearly attending to each other with eye contact. If eye contact has not been established, then it's not a plus.
10. Aggression: The target resident is using his limbs or an object (can be thrown) such that he inflicts physical damage or injury to another or is inflicting injury to himself.
11. Environmental disruption: The target resident is vocalizing at an extreme intensity, breaking objects, throwing objects indiscriminately, disrupting object relations which are designed to be permanent, banging objects loudly, or having a tantrum.

## Appendix II

### Descriptive Statistics for Phase I BDS

# Descriptive Statistics for the Behavior Development Survey\*

## Phase I Data

Item		Phase I Data			I		P	
		25th	Median	75th	Mean	Variance	Mean	Variance
1. (57) Vision - with glasses, if used	(I)+	3.61	3.88	4.16				
4 No difficulty in seeing	(P)	3.67	3.94	4.22				
3 Some difficulty in seeing								
2 Great difficulty in seeing								
1 No vision at all								
2. (58) Hearing - with hearing aid, if used	(I)	3.73	3.96	4.21				
4 No difficulty in hearing	(P)	3.73	3.99	4.24				
3 Some difficulty in hearing								
2 Great difficulty in hearing								
1 No hearing at all								
3. (59) Ambulation	(I)	3.71	3.96	4.20				
4 Walks with no difficulty	(P)	3.59	3.89	4.20				
3 Limps or walks unsteadily								
2 Walks only with help								
1 Unable to walk								
4. Running and walking								
(60) Walks alone					1.00	.00	.98	.02
(61) Walks up and down stairs alone					.95	.05	.82	.14
(62) Walks downstairs by alternating his feet					.90	.09	.60	.24
(63) Runs without falling often								p < .01
(64) Hops, skips or jumps					.79	.17	.73	.20
(65) None of the above					.72	.20	.50	.25
					.00	.00	.03	.24

\* For items where only the most appropriate alternative is checked, the median is given as a measure of central tendency and the 25th and 75th centiles are used to indicate the degree of spread of the observations. For items where every appropriate alternative is checked, the mean is given as a measure of central tendency and variance (assuming a "0"- "behavior absent" and "1"- "behavior present" scale) is used to indicate the degree of spread of the observations.

+ I refers to Institutional values (N = 39) and P refers to Placement values (N = 40).

Item		I			P	
		Mean	Variance	Mean	Variance	
5. (66) Speech		25th	Median	75th		
5 Speech easily understood	(I)	3.79	4.68	5.05		
4 Speech somewhat difficult to understand	(P)	2.83	3.90	4.77		
3 Speech very difficult to understand						
2 Speech is not understandable but makes sounds						
1 Makes no sounds						
6. (67) Vocabulary						
5 Talks about action when describing pictures	(I)	2.29	3.33	4.63		
4 Names people or objects when describing pictures	(P)	2.50	4.00	4.79		
3 Uses names of familiar objects						
2 Asks for at least ten things by their appropriate names						
1 Is nearly non-verbal						
7. (27) Body balance						
6 Stands on tiptoes for ten seconds if asked	(I)	4.11	4.82	5.56		
5 Stands on one foot for two seconds if asked	(P)	4.39	5.32	5.94		
4 Stands without support						
3 Stands with support						
2 Sits without support						
1 Can do none of the above						
8. (28) Use of table utensils						
7 Uses knife and fork correctly and neatly	(I)	5.44	6.65	7.03		
6 Uses table knife for cutting or spreading	(P)	6.05	6.70	7.10		
5 Feeds self with fork and spoon neatly						
4 Feeds self with spoon and fork - considerable spilling						
3 Feeds self with spoon - neatly						
2 Feeds self with spoon - considerable spilling						
1 Feeds self with fingers or other means						

Item	I		P	
	Mean	Variance	Mean	Variance
9. (29) Eating in Public				
4 Orders complete meals in restaurants	(I) 1.25 (P) 1.33	2.11 2.80	2.94 3.24	$p < .025$
3 Orders simple meals like hamburgers or hotdogs				
2 Orders soft drinks at soda fountain or canteen				
1 Does not order at public eating places				
10. (30) Drinking				
4 Drinks without spilling, holding glass in one hand	(I) 3.64 (P) 3.62	3.90 3.92	4.17 4.21	
3 Drinks from cup or glass unassisted - neatly				
2 Drinks from cup or glass unassisted - considerable spilling				
1 Does not drink from cup or glass unassisted				
11. (31) Toilet training				
5 Never has toilet accidents	(I) 4.61 (P) 4.64	4.88 4.93	5.16 5.21	
4 Never has toilet accidents during the day				
3 Occasionally has toilet accidents				
2 Frequently has toilet accidents during the day				
1 Is not toilet trained at all				
12. Self-care at toilet				
(32) Lowers pants at toilet without help		.95	.05	1.00 .00
(33) Sits on toilet seat without help		.97	.03	1.00 .00
(34) Uses toilet tissue appropriately		.77	.18	.78 .17
(35) Flushes toilet after use		.90	.09	.90 .09
(36) Puts on clothes without help		.90	.09	.95 .05
(37) Washes hands without help		.67	.22	.93 .07 $p < .01$
(38) None of the above		.03	.03	.00 .00

Item	25th	Median	75th	I		P	
				Mean	Variance	Mean	Variance
13. Washing hands and face							
{39} Washes hands with soap				.62	.23	.88	.11 $\bar{p} < .05$
{40} Washes face with soap				.64	.23	.90	.09 $\bar{p} < .01$
{41} Washes hands and face with water				.79	.17	.93	.07
{42} Dries hands and face				.79	.17	.93	.07
{43} None of the above				.10	.09	.03	.24
14. (44) Bathing							
7 Prepares and completes bathing	(I) 4.92	6.61	7.01				
6 Washes and dries self completely without	(P) 5.50	6.79	7.14				
5 Washes and dries self reasonably well with prompting							
4 Washes and dries self with help							
3 Attempts to soap and wash self							
2 Cooperates when being washed and dried by others							
1 Makes no attempt to wash or dry self							
15. Care of clothing							
{45} Wipes and polishes shoes when needed				.15	.13	.25	.19
{46} Puts clothes in drawer or chest neatly				.62	.23	.73	.20
{47} Sends clothes to laundry without being reminded				.51	.25	.58	.24
{48} Hangs up clothes without being reminded				.46	.25	.75	.19 $\bar{p} < .01$
{49} None of the above				.23	.18	.13	.11
16. (50) Dressing							
6 Completely dresses self	(I) 5.66	5.91	6.18				
5 Completely dresses self with verbal prompting only	(P) 5.67	5.94	6.22				
4 Completely dresses self by pulling or putting on all clothes with verbal prompting and by fastening them with help							
3 Dresses self with help in pulling or putting on most clothes and fastening them							
2 Cooperates when dressed by extending arms or legs							
1 Must be dressed completely							

Item	25th	Median	75th	I		P	
				Mean	Variance	Mean	Variance
17. Shoes							
(51) Puts on shoes correctly without assistance				.87	.11	.88	.11
(52) Ties shoe laces without assistance				.64	.23	.55	.25
(53) Unties shoe laces without assistance				.77	.18	.65	.23
(54) Removes shoes without assistance				.92	.07	.95	.05
(55) None of the above				.03	.03	.00	.00
18. (56) Sense of direction	(I) 2.65	3.38	3.41				
4 Goes a few blocks from hospital or school ground or several blocks from home without getting lost	(P) 2.00	3.63	4.07				
3 Goes around hospital ground or a few blocks from home without getting lost							
2 Goes around cottage, home or ward alone							
1 Gets lost whenever he leaves his own living area							
19. (57) Money handling	(I) 1.20	1.70	2.10				
5 Uses banking facilities independently	(P) 1.50	1.90	2.30				
4 Makes change correctly but does not use banking facilities							
3 Adds coins of various denominations, up to one dollar							
2 Uses money, but does not make change correctly							
1 Does not use money							
20. (58) Purchasing	(I) 1.68	2.27	3.66				
6 Buys all own clothing	(P) 1.80	2.83	3.90				
5 Buys own clothing accessories							
4 Makes minor purchases without help (candy, etc.)							
3 Does shopping with slight supervision							
2 Does shopping with close supervision							
1 Does no shopping							

Item	25th	Median	75th	I		p	
				Mean	Variance	Mean	Variance
21. (59) Writing							
6 Writes sensible and understandable letters	(I) .92 (P) 1.06	1.30 1.50	1.82 2.42				
5 Writes short notes and memos							
4 Writes or prints forty words							
3 Writes or prints ten words							
2 Writes or prints own name							
1 Cannot write or print any words							
22. Preverbal expression							
(60) Nods head or smiles to express happiness				.82	.15	.00	$p < .025$
(61) Indicates hunger				.77	.18	.88	.11
(62) Indicates wants by pointing or vocal noises				.67	.22	.90	$p < .05$
(63) Chuckles or laughs when happy				.79	.17	.95	.05
(64) Expresses pleasure or anger by vocal noises				.79	.17	.93	.07
(65) Is able to say at least a few words				.87	.11	.88	.11
(66) None of the above				.03	.03	.00	.00
23. (67) Sentences							
4 Sometimes uses complex sentences containing "because," "but," etc.	(I) 1.48 (P) 1.68	2.44 3.60	3.38 3.59				
3 Asks questions using words such as "why," "how," "what," etc.							
2 Speaks in simple sentences							
1 Is non-verbal or nearly non-verbal							
24. (68) Reading							
6 Reads books suitable for children nine years or older	(I) .81 (P) .88	1.10 1.27	1.40 2.50				
5 Reads books suitable for children seven years old							
4 Reads simple stories or comics							
3 Reads various signs, "ONE WAY," "NO PARKING," "WOMEN," "MEN"							
2 Recognizes ten or more words by sight							
1 Recognizes fewer than ten words or none at all							

Item	I	Mean		Median	25th	75th	P	
		Variance	Variance				Mean	Variance
25. Complex instructions								
(27) Understands instructions containing propositions, e.g., "on," "in," "behind," etc.	.87	.11	.88	.11				.11
(28) Understands instructions referring to the order in which things must be done, e.g., "first do --, then do --"	.46	.25	.73	.20				$p < .025$
(29) Understands instructions requiring a decision: "If --, do this, but if not, do --"	.28	.20	.40	.24				.24
(30) None of the above	.08	.07	.13	.17				.17
26. (31) Numbers								
6 Does simple addition and subtraction	(I) 1.39	2.56	3.92					
5 Counts ten or more objects	(P) 1.83	5.17						
4 Mechanically counts to ten								
3 Counts two objects by saying "one ... two"								
2 Discriminates between "one" and "many" or "a lot"								
1 Has no understanding of numbers								
27. Time								
(32) Tells time by watch or clock correctly to the minute	.03	.02	.08	.07				.07
(33) Understands time intervals, e.g., between "3:30" and "4:30"	.13	.11	.15	.13				.13
(34) Understands time equivalents, e.g., "9:15" is the same as "quarter past nine"	.05	.05	.05	.05				.05
(35) Associates time on clock with various actions and events	.33	.22	.33	.22				.22
(36) None of the above	.62	.23	.65	.23				.23
28. (37) Room cleaning								
3 Cleans room well, e.g., sweeping, dusting, tidying	(I) 1.07	1.71	2.53					$p < .025$
2 Cleans room but not thoroughly	(P) 1.79	2.50	3.00					
1 Does not clean room at all								

I P

Item	25th	Median	75th	I	
				Mean	Variance
29. (38) Food Preparation					
4 Prepares an adequate complete meal (may use canned or frozen foods)	(I) .85	1.20	1.68		$P < .001$
3 Mixes and cooks simple food, e.g., fries eggs, makes pancakes, cooks TV dinners, etc.	(P) 1.50	2.50	3.50		
2 Prepares simple foods requiring no mixing or cooking, e.g., sandwiches, cold cereal, etc.					
1 Does not prepare food at all					
30. (39) Table clearing					
3 Clears table of breakable dishes and glassware	(I) 1.71	2.32	2.64		$P < .001$
2 Clears table of unbreakable dishes and glassware	(P) 2.64	2.93	3.21		
1 Does not clear table at all					
31. (40) Job complexity					
3 Performs a job requiring use of tools or machinery, e.g., shopwork, sewing, etc.	(I) 1.20	1.73	2.13		$P < .001$
2 Performs simple work, e.g., simple gardening, mopping floors, emptying trash, etc.	(P) 1.78	2.18	2.67		
1 Performs no work at all					
32. (41) Initiative					
4 Initiates most of his own activities, e.g., tasks, games, etc.	(I) 1.87	2.33	3.85		
3 Asks if there is something for him to do or explores surroundings, e.g., home, yard, etc.	(P) 2.27	3.55	4.02		
2 Will engage in activities only if assigned or directed					
1 Will not engage in assigned activities, e.g., putting away toys, etc.					

Item	25th	Median	75th	Mean	Variance	Mean	Variance
33. (42) Attention							
5 Will pay attention to purposeful activities for more than fifteen minutes, e.g., playing games, reading, cleaning up	(I) 2.03	3.55	4.53	$p < .001$			
4 Will pay attention to purposeful activities for at least fifteen minutes	(P) 3.93	4.73	5.12				
3 Will pay attention to purposeful activities for at least ten minutes							
2 Will pay attention to purposeful activities for at least five minutes							
1 Will not pay attention to purposeful activities for as long as five minutes							
34. (43) Personal belongings							
4 Very dependable - always takes care of personal belongings	(I) 2.56	3.31	3.93				
3 Usually dependable - usually takes care of personal belongings	(P) 2.88	3.50	4.00				
2 Unreliable - seldom takes care of personal belongings							
1 Not responsible at all - does not take care of personal belongings							
35. Awareness of others							
(44) Recognizes own family				.77	.18	.83	.14
(45) Recognizes people other than family				.95	.05	1.00	.00
(46) Has information about others, e.g., job, address, relation to self				.38	.24	.58	.24
(47) Knows the names of people close to him, e.g., classmates, neighbors				.82	.15	.95	.05
(48) Knows the names of people not regularly encountered				.38	.24	.45	.25
(49) None of the above				.03	.02	.00	.00

Item		25th	Median	75th	I		D	
					Mean	Variance	Mean	Variance
36. (50)	Interacts with others	(I)						
4	Interacts with others in group games or activity	(P)	3.00	3.75		$p < .05$		
3	Interacts with others for at least a short period of time, showing or offering toys, clothing or objects		3.70	4.10				
2	Interacts with others imitatively with little interaction.							
1	Does not respond to others in a socially acceptable manner							
37. (51)	Participation in group activities	(I)	2.36	2.95		$p < .001$		
4	Initiates group activities (leader and organizer)	(P)	3.70	4.10				
3	Participates in group activities spontaneously and eagerly (active participant)							
2	Participates in group activities if encouraged to do so (passive participant)							
1	Does not participate in group activities							
38. Maladaptive behavior*								
(52)	Threatens or does physical violence to others	(I)	1.79	2.30		$p < .001$		
		(P)	1.41	1.94				
(53)	Damages own or other's property	(I)	1.13	1.44				
		(P)	1.13	1.44				
(54)	Disrupts other's activities	(I)	1.20	1.64				
		(P)	1.33	2.00				
(55)	Uses profane or hostile language	(I)	1.69	3.24				
		(P)	1.30	1.83				
(56)	Is rebellious, e.g., ignores regulations, resists following instructions	(I)	1.95	2.46				
		(P)	1.71	2.24				

1 65 1

\* Contrary to the numbers printed on the RDS form, this scale was quantified using "1" = "Never," "2" = "Occasionally," and "3" = "Frequently"

Item	25th	Median	75th	i		p
				Mean	Variance	
38. Maladaptive behavior (continued)						
(57) Runs away or attempts to run away (I) (P)	.77 .76	1.04 1.03	1.31 1.29			
(58) Is untrustworthy, e.g., takes other's property, lies or cheats (I) (P)	1.04 .81	1.59 1.13	2.20 1.44	p < .001		
(59) Displays stereotyped behavior, e.g., rocks body back and forth, has hands in motion (I) (P)	.99 .90	1.48 1.30	2.34 1.95			
(60) Removes or tears off own clothing (I) (P)	.78 .76	1.06 1.03	1.34 1.29			
(61) Does physical violence to self (I) (P)	.81 .81	1.13 1.13	1.44 1.44			
(62) Is hyperactive, e.g., will not sit still for any length of time (I) (P)	.92 .87	1.35 1.24	2.07 1.88			
(63) Displays heterosexual behavior that is socially unacceptable (I) (P)	.84 .79	1.17 1.09	1.53 1.38			
(64) Displays homosexual behavior that is socially unacceptable (I) (P)	.81 .78	1.13 1.06	1.44 1.33			
(65) Displays other unacceptable sexual behavior, e.g., masturbates, exposes self (I) (P)	.77 .79	1.01 1.07	1.27 1.36			
39. Sum of maladaptive behaviors (52) through (65)				20.10	11.10	18.12 9.55

### Appendix III

#### Descriptive Statistics for Phase II BDS

# Descriptive Statistics for the Behavior Development Survey\*

Item	Phase II Data				I		P	
		25th	Median	75th	Mean	Variance	Mean	Variance
1. (57) Vision - with glasses, if used	(I)+	3.00	3.55	4.02				
4 No difficulty in seeing	(P)	2.69	3.33	3.93				
3 Some difficulty in seeing								
2 Great difficulty in seeing								
1 No vision at all								
2. (58) Hearing - with hearing aid, if used	(I)	3.15	3.75	4.13				
4 No difficulty in hearing	(P)	3.08	3.78	4.14				
3 Some difficulty in hearing								
2 Great difficulty in hearing								
1 No hearing at all								
3. (59) Ambulation	(I)	3.67	3.95	4.22				
4 Walks with no difficulty	(P)	3.54	3.86	4.18				
3 Limps or walks unsteadily								
2 Walks only with help								
1 Unable to walk								
4. Running and walking								
(60) Walks alone					1.00	.00	.46	.04
(61) Walks up and down stairs alone					.71	.21	.87	.11
(62) Walks downstairs by alternating his feet					.38	.24	.65	.23
(63) Runs without falling often					.48	.25	.65	.23
(64) Hops, skips or jumps					.29	.21	.43	.25
(65) None of the above					.00	.00	.04	.04

\* For items where only the most appropriate alternative is checked, the median is given as a measure of central tendency and the 25th and 75th centiles are used to indicate the degree of spread of the observations. For items where every appropriate alternative is checked, the mean is given as a measure of central tendency and variance (assuming a "0"- "behavior absent" and "1"- "behavior present" scale) is used to indicate the degree of spread of the observations.

+ I refers to Institutional values (N = 21) and P refers to Placement values (N = 23).

Item	I		P	
	Mean	Variance	Mean	Variance
5. (66) Speech			75th	
5 Speech easily understood	(I)			
4 Speech somewhat difficult to understand	(P)		4.34	
3 Speech very difficult to understand			4.38	
2 Speech is not understandable but makes sounds				
1 Makes no sounds				
6. (67) Vocabulary				
5 Talks about action when describing pictures	(I)	1.08	2.00	4.08
4 Names people or objects when describing pictures	(P)	1.46	2.42	4.67
3 Uses names of familiar objects				
2 Asks for at least ten things by their appropriate names				
1 Is nearly non-verbal				
7. (27) Body balance				
6 Stands on tiptoes for ten seconds	(I)	3.70	4.03	4.36
5 Stands on one foot for two seconds if asked	(P)	4.14	5.00	5.86
4 Stands without support				$p < .005$
3 Stands with support				
2 Sits without support				
1 Can do none of the above				
8. (28) Use of table utensils				
7 Uses knife and fork correctly and neatly	(I)	3.58	5.13	6.84
6 Uses table knife for cutting or spreading	(P)	3.69	5.75	6.93
5 Feeds self with fork and spoon neatly				
4 Feeds self with spoon and fork - considerable spilling				
3 Feeds self with spoon - neatly				
2 Feeds self with spoon - considerable spilling				
1 Feeds self with fingers or must be fed				

Item	25th	Median	75th	Mean	Variance	Mean	Variance
9. (29) Eating in Public							
4 Orders complete meals in restaurants	(I) .85 (P) .88	1.20 1.27	1.75 2.88				
3 Orders simple meals like hamburgers or hotdogs							
2 Orders soft drinks at soda fountain or canteen							
1 Does not order at public eating places							
10. (30) Drinking							
4 Drinks without spilling, holding glass in one hand	(I) 3.06 (P) 2.96	3.75 3.68	4.13 4.09				
3 Drinks from cup or glass unassisted - neatly							
2 Drinks from cup or glass unassisted - considerable spilling							
1 Does not drink from cup or glass unassisted							
11. (31) Toilet training							
5 Never has toilet accidents	(I) 3.11 (P) 3.19	4.69 4.62	5.10 5.06				
4 Never has toilet accidents during the day							
3 Occasionally has toilet accidents							
2 Frequently has toilet accidents during the day							
1 Is not toilet trained at all							
12. Self-care at toilet							
(32) Lowers pants at toilet without help				.81	.15	.87	.11
(33) Sits on toilet seat without help				.90	.09	.83	.14
(34) Uses toilet tissue appropriately				.67	.22	.48	.25
(35) Flushes toilet after use				.81	.15	.61	.24
(36) Puts on clothes without help				.71	.21	.65	.23
(37) Washes hands without help				.48	.25	.57	.24
(38) None of the above				.10	.09	.13	.11

Item	25th	Median	75th	I		P	
				Mean	Variance	Mean	Variance
13. Washing hands and face							
(39) Washes hands with soap				.43	.24	.74	.19
(40) Washes face with soap				.38	.24	.65	.23
(41) Washes hands and face with water				.57	.25	.71	.21
(42) Dries hands and face				.67	.22	.70	.21
(43) None of the above				.24	.18	.26	.19
14. (44) Bathing							
7 Prepares and completes bathing	(I) 2.75	4.40	5.29				
6 Washes and dries self completely without	(P) 2.42	6.62	7.06				
5 Washes and dries self completely without							
4 Washes and dries self reasonably well with prompting							
3 Attempts to soap and wash self							
2 Cooperates when being washed and dried by others							
1 Makes no attempt to wash or dry self							
15. Care of clothing							
(45) Wipes and polishes shoes when needed				.05	.05	.39	.24
(46) Puts clothes in drawer or chest neatly				.38	.24	.43	.25
(47) Sends clothes to laundry without being reminded				.05	.05	.30	.21
(48) Hangs up clothes without being reminded				.52	.25	.39	.24
(49) None of the above				.48	.25	.30	.21
16. (50) Dressing							
6 Completely dresses self	(I) 3.75	5.75	6.13				
5 Completely dresses self with verbal prompting only	(P) 4.25	5.62	6.06				
4 Completely dresses self by pulling or putting on all							
3 clothes with verbal prompting and by fastening them with help							
2 Dresses self with help in pulling or putting on most clothes							
1 and fastening them							
2 Cooperates when dressed by extending arms or legs							
1 Must be dressed completely							

Item	25th	Median	75th	I		P	
				Mean	Variance	Mean	Variance
17. Shoes							
(51) Puts on shoes correctly without assistance				.71	.21	.70	.21
(52) Ties shoe laces without assistance				.43	.24	.39	.24
(53) Unties shoe laces without assistance				.56	.25	.57	.24
(54) Removes shoes without assistance				.71	.21	.74	.19
(55) None of the above				.24	.18	.22	.17
18. (56) Sense of direction	(I) 1.64	2.22	3.19				
4 Goes a few blocks from hospital or school ground or several blocks from home without getting lost	(P) 1.57	2.09	3.11				
3 Goes around hospital ground or a few blocks from home without getting lost							
2 Goes around cottage, home or ward alone							
1 Gets lost whenever he leaves his own living area							
19. (57) Money handling	(I) .81	1.12	1.43				
5 Uses banking facilities independ- ently	(P) .98	1.46	2.08				
4 Makes change correctly but does not use banking facilities							
3 Adds coins of various denominations, up to one dollar							
2 Uses money, but does not make change correctly							
1 Does not use money							
20. (58) Purchasing	(I) .83	1.16	1.43				
6 Buys all own clothing	(P) .98	1.46	2.58				
5 Buys own clothing accessories							
4 Makes minor purchases without help (candy, etc.)							
3 Does shopping with slight supervision							
2 Does shopping with close supervision							
1 Does no shopping							

Item	I	P						
	Mean	Variance	Mean	Variance	Mean	Variance	Mean	Variance
21. (59) Writing								
6 Writes sensible and understandable letters	(I)	.83	Median	75th				
5 Writes short notes and memos	(P)	.84	1.16	1.43				
4 Writes or prints forty words			1.18	1.56				
3 Writes or prints ten words								
2 Writes or prints own name								
1 Cannot write or print any words								
22. Preverbal expression								
(60) Nods head or smiles to express happiness								
(61) Indicates hunger								
(62) Indicates wants by pointing or vocal noises								
(63) Chuckles or laughs when happy								
(64) Expresses pleasure or anger by vocal noises								
(65) Is able to say at least a few words								
(66) None of the above								
23. (67) Sentences								
4 Sometimes uses complex sentences containing "because," "but," etc.	(I)	.88	1.25	1.63				
3 Asks questions using words such as "why," "how," "what," etc.	(P)	1.08	1.80	3.13				
2 Speaks in simple sentences								
1 Is non-verbal or nearly non-verbal								
24. (68) Reading								
6 Reads books suitable for children nine years or older	(I)	.79	1.08	1.38				
5 Reads books suitable for children seven years old	(P)	.79	1.08	1.36				
4 Reads simple stories or comics								
3 Reads various signs, "ONE WAY," "NO PARKING," "WOMEN," "MEN"								
2 Recognizes ten or more words by sight								
1 Recognizes fewer than ten words or none at all								

p < .02  
 .73  
 .

Item	25th	Median	75th	I		P	
				Mean	Variance	Mean	Variance
25. Complex instructions							
(27) Understands instructions containing propositions, e.g., "on," "in," "behind," etc.				.52	.25	.57	.25
(28) Understands instructions referring to the order in which things must be done, e.g., "first do --, then do --"				.33	.22	.35	.23
(29) Understands instructions requiring a decision: "If --, do this, but if not, do --"				.24	.18	.35	.23
(30) None of the above				.43	.24	.39	.24
26. (31) Numbers							
6 Does simple addition and subtraction	(I)	.90	1.31	2.42			
5 Counts ten or more objects	(P)	1.02	1.63	3.13			
4 Mechanically counts to ten							
3 Counts two objects by saying "one ... two"							
2 Discriminates between "one" and "many" or "a lot"							
1 Has no understanding of numbers							
27. Time							
(32) Tells time by watch or clock correctly to the minute				.10	.09	.04	.04
(33) Understands time intervals, e.g., between "3:30" and "4:30"				.10	.09	.04	.04
(34) Understands time equivalents, e.g., "9:15" is the same as "quarter past nine"				.05	.05	.09	.08
(35) Associates time on clock with various actions and events				.19	.15	.22	.17
(36) None of the above				.81	.15	.78	.17
28. (37) Room cleaning							
3 Cleans room well, e.g., sweeping, dusting, tidying	(I)	.85	1.20	1.48			$P < .01$
2 Cleans room but not thoroughly	(P)	1.32	1.95	2.54			
1 Does not clean room at all							

Item	I		P	
	Mean	Variance	Mean	Variance
29. (38) Food Preparation				
4 Prepares an adequate complete meal (may use canned or frozen foods)	(I) .79	1.08	1.38	p < .005
3 Mixes and cooks simple food, e.g., fries eggs, makes pancakes, cooks TV dinners, etc.	(P) 1.14	1.78	2.42	
2 Prepares simple foods requiring no mixing or cooking, e.g., sandwiches, cold cereal, etc.				
1 Does not prepare food at all				
30. (39) Table clearing				
3 Clears table of breakable dishes and glassware	(I) 1.03	1.56	2.22	p < .05
2 Clears table of unbreakable dishes and glassware	(P) 1.32	2.80	3.02	
1 Does not clear table at all				
31. (40) Job complexity				
3 Performs a job requiring use of tools or machinery, e.g., shopwork, sewing, etc.	(I) .88	1.25	1.85	
2 Performs simple work, e.g., simple gardening, mopping floors, emptying trash, etc.	(P) 1.22	1.85	2.42	
1 Performs no work at all				
32. (41) Initiative				
4 Initiates most of his own activities, e.g., tasks, games, etc.	(I) 1.56	3.00	3.98	
3 Asks if there is something for him to do or explores surroundings, e.g., home, yard, etc.	(P) 1.81	2.44	3.81	
2 Will engage in activities only if assigned or directed				
1 Will not engage in assigned activities, e.g., putting away toys, etc.				

Item	I		P	
	Mean	Variance	Mean	Variance
33. (42) Attention			75th	
5 Will pay attention to purposeful activities for more than fifteen minutes, e.g., playing games, reading, cleaning up	(I) 1.81	3.00	4.44	
4 Will pay attention to purposeful activities for at least fifteen minutes	(P) 1.46	3.25	3.81	
3 Will pay attention to purposeful activities for at least ten minutes				
2 Will pay attention to purposeful activities for a least five minutes				
1 Will not pay attention to purposeful activities for as long as five minutes				
34. (43) Personal belongings				
4 Very dependable - always takes care of personal belongings	(I) 1.16	2.00	2.96	
3 Usually dependable - usually takes care of personal belongings	(P) 1.22	2.38	3.25	
2 Unreliable - seldom takes care of personal belongings				
1 Not responsible at all - does not take care of personal belongings				
35. Awareness of others				
(44) Recognizes own family	.43	.24	.61	.24
(45) Recognizes people other than family	.76	.18	.74	.19
(46) Has information about others, e.g., job, address, relation to self	.24	.18	.27	.17
(47) Knows the names of people close to him, e.g., classmates, neighbors	.48	.25	.43	.25
(48) Knows the names of people not regularly encountered	.19	.15	.09	.08
(49) None of the above	.14	.12	.13	.11

Item	I		P	
	Mean	Variance	Mean	Variance
36. (50) Interaction with others			75th	
4 Interacts with others in group games	(I) 1.54	2.29	3.44	
3 Interacts with others for at least a short period of time, showing or offering toys, clothing or objects	(P) 2.42	3.00	3.86	
2 Interacts with others imitatively with little interaction				
1 Does not respond to others in a socially acceptable manner				
37. (51) Participation in group activities	(I) 1.73	2.25	2.84	
4 Initiates group activities (leader and organizer)	(P) 1.56	2.04	2.55	
3 Participates in group activities spontaneously and eagerly (active participant)				
2 Participates in group activities if encouraged to do so (passive participant)				
1 Does not participate in group activities				
38. Maladaptive behavior*				
(52) Threatens or does physical violence to others	(I) .94	1.38	2.04	
	(P) .89	1.18	2.58	
(53) Damages own or other's property	(I) .88	1.25	1.85	
	(P) .79	1.08	1.36	
(54) Disrupts other's activities	(I) .81	1.12	1.43	
	(P) .94	1.38	2.03	
(55) Uses profane or hostile language	(I) .85	1.20	1.75	
	(P) .82	1.14	1.46	
(56) Is rebellious, e.g., ignores regulations, resists following instructions	(I) 1.03	1.60	2.63	
	(P) 1.02	1.56	2.28	

\* Contrary to the numbers printed on the BDS form, this scale was quantified using "1" = "Never," "2" = "Occasionally," and "3" = "Frequently"

Item	I	P	I			P		
	Mean	Variance	Mean	Variance	Mean	Variance	Mean	Variance
38. Maladaptive behavior (continued)								
(57) Runs away or attempts to run away	(I) (P)	.78 .76	1.05 1.02	1.33 1.28				
(58) Is untrustworthy, e.g., takes other's property, lies or cheats	(I) (P)	.85 .79	1.20 1.15	1.88 1.36				
(59) Displays stereotyped behavior, e.g., rocks body back and forth, has hands in motion	(I) (P)	1.16 1.08	3.00 1.75	3.02 2.68				
(60) Removes or tears off own clothing	(I) (P)	.76 .77	1.05 1.05	1.29 1.32				
(61) Does physical violence to self	(I) (P)	.88 .84	1.25 1.18	1.85 1.56				
(62) Is hyperactive, e.g., will not sit still for any length of time	(I) (P)	.90 .88	1.31 1.27	2.63 1.95				
(63) Displays heterosexual behavior that is socially unacceptable	(I) (P)	.78 .76	1.05 1.02	1.33 1.28				
(64) Displays homosexual behavior that is socially unacceptable	(I) (P)	.79 .75	1.08 1.00	1.38 1.25				
(65) Displays other unacceptable sexual behavior, e.g., masturbates, exposes self	(I) (P)	.88 .84	1.25 1.18	1.93 1.95				
39. Sum of maladaptive behaviors (52) through (65)			20.24	13.99	18.52	14.17		

#### Appendix IV

#### Agency Comments And Responses

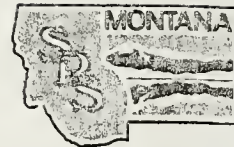
*The Big Sky Country*



**STATE OF MONTANA**  
**SOCIAL AND REHABILITATION SERVICES**

P.O. BOX 4210  
HELENA, MONTANA 59601

September 29, 1977



THOMAS L. JUDGE  
GOVERNOR

PATRICK E. MELBY  
DIRECTOR

DEVELOPMENTAL DISABILITIES DIVISION  
L. A. HAMERLYNCK  
ADMINISTRATOR

Ted Clack  
Office of Budget and Program  
Planning  
Capitol Building  
Helena, MT 59601

Dear Ted:

I am responding on behalf of the Developmental Disabilities Division to the report entitled "An Evaluation Study of Deinstitutionalization of the Developmentally Disabled in Montana," by James and Roberta Walsh.

The Division feels the study was conducted properly and very well-written. Needless-to-say, the results pleased us, as community placement was heavily favored. While the results certainly speak for themselves, the Division is particularly interested in the various ways they can be interpreted and the questions raised by them, as they have fiscal implications. For example, if the improvements shown in the Phase I sample were primarily a function of increased expectancies to do more for themselves and/or simply the provision of an environment "with room for those skills to be developed and exhibited" (pg.33), then formal daily living training may not be as important as we generally assume. Recall that this group was comprised of adults who were undoubtedly higher functioning and placed much earlier than the Phase II sample. On the other hand, the Phase II sample, who were younger and lower in functioning level (but had had less exposure to the community at the time of assessment), may have a much greater need for daily living training following deinstitutionalization since their gains were less impressive. This could be advanced as a justification for the higher cost of children's services (group home and family training), while possibly suggesting that the costs for daily living training in adult group homes could be reduced. As you know, we have daily living training contracts with nearly all DD group homes in Montana.

In any event, we compliment the Walsh's for their excellent report as well as your choice of persons with whom to contract. If further discussion would be useful, please contact me.

Sincerely,

A handwritten signature in dark ink, appearing to read "Dick Swenson".

Richard P. Swenson, Ph.D.  
Habilitation and Evaluation Bureau

cc: L. A. Hamerlynck

STATE OF MONTANA  
DEPARTMENT OF INSTITUTIONS  
HELENA

To John Fitzpatrick  
Office of Budget and Program Planning

Date:

From Lawrence Zanto, Director

Subject Response to the draft report on Deinstitutionalization of the Developmentally Disabled.

Enclosed please find the Department of Institutions' response to the draft report submitted by Drs. James and Roberta Walsh entitled An Evaluation Study of Deinstitutionalization of the Developmentally Disabled in Montana.

I would like to express my appreciation for the courtesy extended this Department in being able to review and comment upon this draft report.

LZ:sf

cc: Bill Conyard  
Larry Carlson

Department of Institutions Response to the Report entitled An Evaluation Study of Deinstitutionalization of the Developmentally Disabled in Montana - submitted to the Office of Budget and Program Planning by Drs. James and Roberta Walsh.

In response to the draft report submitted by Drs. James and Roberta Walsh we have asked for written comments from various responsible parties in our department and have held subsequent meetings with departmental staff who have been directly involved in the administration and research of the deinstitutionalization programs involving our developmentally disabled clients. There are, therefore, some brief comments we would like to make and would initially like to state that our comments are predicated upon the Department's own experience and demonstrative commitment to the process of seeking the least restrictive and most appropriate treatment environment for all patients who are either currently residents of institutions or participating in community programs supported by this or other departments.

Initially, we would like to generally credit the report for its frankness, thoroughness, and readable style. Due to the time within which we had to respond to this particular study, the Department's critique of the Walsh report will restrict comments to the broad conceptual issues addressed by the draft. We are assuming statistical manipulations are accurate and some minor methodological questions would not significantly alter the overall outcome of the study. Therefore this Department feels the following comments and critique are appropriate relative to the draft report:

1. Unfortunately, "deinstitutionalization" is not only a very complex logistical undertaking, but also encompasses varying but fundamental, theoretical, philosophical, and professional approaches to care and treatment. Additionally, as was indicated in the draft report, deinstitutionalization has powerful, political/social implications, as well as arousing intense emotional reactions within both professional and lay groups. One should be cautious of interpreting deinstitutionalization as the only goal of care and treatment of the mentally disordered; rather it should be evaluated as a single component, albeit significant and important, within a continuum of treatment approaches available to be employed when appropriate to an individual's identified needs.
2. Although qualified, the authors' conclusion that their data "... clearly supports the conclusion of at least limited success for the deinstitutionalization program" leaves unanswered several important questions: Successful as measured by what criteria? Has the deinstitutionalized population somehow increased their behavioral potential beyond what could have been achieved if they had remained in the institutions? Is deinstitutionalization salutary per se, independent of the environments in question? Finally, are there populations for whom deinstitutionalization is presently inappropriate?

3. One serious question that might be raised relative to the study's approach to evaluating the parameters of the "effectiveness" of deinstitutionalization is the lack of a matched sample within the institution against which the deinstitutionalized population could be compared. Pre and post deinstitutionalization tests only serve to establish the fact that behavioral changes occur. Such tests do not establish any variable associated with the change. As acknowledged by the authors, quality and the amount of programming and treatment provided by Boulder River School and Hospital has increased significantly during the 1975-1977 biennium. While it may be true that the gains in positive behavioral change would be appreciably greater in Montana's community programs as compared to those of an institution operating under the traditional care and custody model, such a blanket comparison is not applicable to Boulder River School and Hospital as it functions today.
4. This department contends that one must examine the validity of this research for a long term (five to ten years). Can the behavioral gains cited in the report be maintained over an extended period of time? What effect does the initial enthusiasm and idealism of workers investing in a new and socially sanctioned program have if this is a significant variable? This department would certainly support, and in fact, does recommend the need for continued and multi-yearred evaluation of deinstitutionalization in order to resolve some of these questions and to better and more effectively validate the premises upon which deinstitutionalization is currently operating.

As stated above, this department is in full support of Montana's efforts to implement appropriate deinstitutionalization programs. However, as the state's agent with primary responsibility for insuring that citizens entrusted to its care receive the most beneficial and appropriate services, we are also concerned that all programs impacting on that population are carefully reviewed and evaluated. It would seem that at best, one can only conclude from the data presented in the draft report that persons evaluated as deinstitutionalized did not regress in their behavior during the year they have been in the community and that there were positive behavioral changes occurring during that time. This is positive reinforcement that there has been, in fact, success within the deinstitutionalization effort. As far as the Department of Institutions is concerned, this is both commendable and desirable. However, if there are variables at work that will result in a negative effect on our commitment to the total deinstitutionalization effort, it would behoove all state agencies involved in this effort to maintain strong and enlightened evaluation processes to preserve the integrity and clarification of our deinstitutionalization effort. Only in this way can the developmentally disabled always be guaranteed the best possible of appropriate services to meet their needs.

Office of the Governor

Budget and Program Planning

Capitol Building - Helena, Montana 59601

Thomas L. Judge  
Governor

Michael G. Billings  
Director

September 9, 1977

James and Roberta A. Walsh  
Consulting Psychologists  
505 East Kent  
Missoula, Montana 59801

Dear Jim and Roberta:

I've seen John's letter to you. I add my thanks for the quality of your work and for the pleasure of doing business with you. It's also nice to renew pleasurable links with the past.

John also mentioned that I have some comments on the report. The final report of the project will be written for lay readers, but not for naive ones. I suspect that most who will read the report will be involved in related programs in one capacity or another. In light of this, I suggest the following:

1. Include a general discussion explaining your choice of statistical methods used in the study, and why different methods were used at different points in the study. In addition, explain the controls implicit in those designs, that allowed you to draw your conclusions. One person in our office asked, "How can they be sure that the changes didn't occur solely as a function of time?" I'm no longer sophisticated enough in statistics to answer that question adequately. You allude to these matters in the discussion, but I think you should address them more directly, perhaps briefly in the introduction and more elaborately in the discussion. Finally, it would be helpful to add a paragraph on your sample sizes. Most readers probably won't understand sampling and will need to be reassured of the statistical integrity of your sample sizes.
2. I recognize that the Manifest and ARS/BDS instruments were used because of historical precedent at BRSH and also because they are practically unique in the field. However, it would be useful for the readers to be educated in the advantages of that kind of instrument and in the validity of the behaviors it measures as predictors of ability. A concise description of the tests and their strengths, and the assumptions underlying them would be very helpful.

James and Roberta A. Walsh

-2-

September 9, 1977

3. The abbreviations of the Manifest variables in the Method/Results section will confuse and frustrate some readers. Please spell out the variables and refer the reader to the appropriate page in the appendix for the complete definitions. Perhaps the elaboration I requested in No. 2 above, will solve part of the problem.
4. Please identify and briefly discuss the "demographic and placement setting" characteristics that you found to have no significant relationship. "Negative results" will be useful to program people, at least.

Again, thanks for the good job.

Sincerely,



Theodore H. Clack, Jr.  
Program Manager  
Deinstitutionalization Evaluation  
Project

THC:cm





